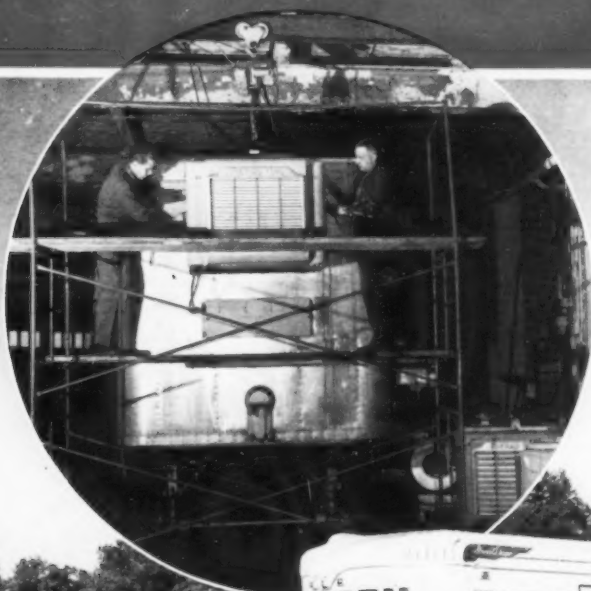


COMMERCIAL REFRIGERATION & AIR CONDITIONING

FEBRUARY 1954

FRANCHISE
CIRCULATION

- Fuel Costs Cut 33% by Revamped Heating System
- Year-Round Control for Air Conditioning Systems



Truck Refrigeration

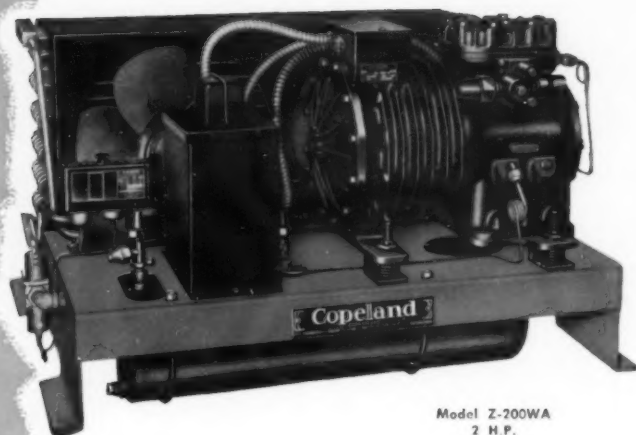
*a growing opportunity
for contractor - dealers*

(see story on page 34)



**MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF
AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT**

need
added
sales
advantages?



Model Z-200WA
2 H.P.
Combination
Air and Water Cooled
COPELAMETIC

you get them in

COPELAMETIC
THE *Accessible* HERMETIC

You get a head start in closing the sale when you recommend Copelametic. It has the important features of any direct-drive motor-compressor . . . no belts, seals or manual oiling required. But the practical, plus feature is "accessibility." If the need ever arises a serviceman can take care of it right on the job. Think what that means to the user. He's quick to see why the efficient Copelametic is the best buy.

Compact, quiet-running Copelametics are built for remote or self-contained use. Air-cooled models from 1/6 H.P. through 3 H.P., water-cooled models from 1/3 H.P. through 7½ H.P. There are sizes of combination air- and water-cooled through 3 H.P.

WRITE FOR CATALOG C-53

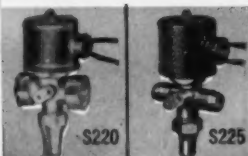
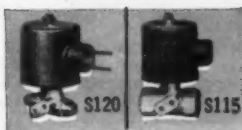


REFRIGERATION UNITS (OPEN - TYPE AND COPELAMETIC) WATER COOLERS

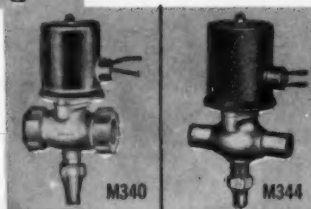
Copeland
DEPENDABLE *Electric* REFRIGERATION

COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO

Circle No. 1 on Reader Service Card



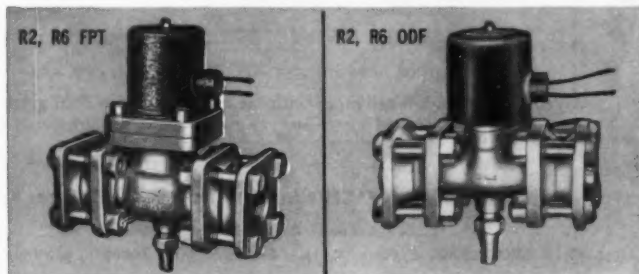
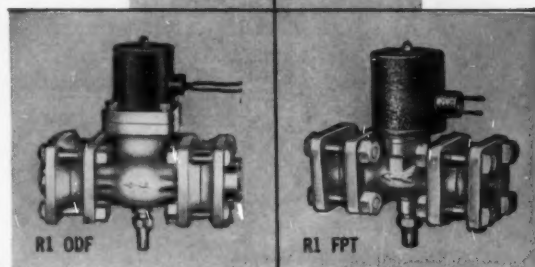
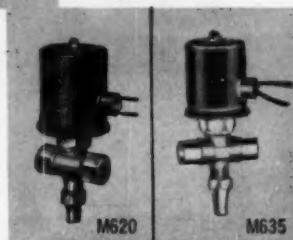
ALCO
SOLENOID
VALVES



the complete line

- for Freon-12, Freon-22, Methyl Chloride and Ammonia
- for liquid line, suction line or hot gas discharge service.
- for brine, water, steam, air, oil
- for all types of electric current
- for wide range of connections: $\frac{1}{2}$ " to $2\frac{1}{2}$ " solder, $\frac{3}{8}$ " to 2" pipe thread
- for use with thermostats, float switches, timers, and many other control devices

Special valves for special applications are available.



Our Bulletins 173 and 182 give complete technical information. Send for your free copies today.

SEE YOUR ALCO WHOLESALER



ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.



more in '54

PACKAGED AIR CONDITIONERS



NEW BRUNNER AIR CONDITIONERS

— in a variety of models for within-room or duct installation, are available in 2, 3, 5, 7½, 10, 15 and 20 H.P. sizes. Completely self-contained, easy to install, easy to service.

You sell more
with
More to sell!

When you sell Brunner Air Conditioners you'll notice . . . Brunner gives you *more* to sell. More features that your customers want — more models with more flexibility to fit *any* application. And more sizes, too — for Brunner Air Conditioners are now available in sizes up to 20 H.P.! And, of course, the famous Brunner slow-speed compressor in every model means *more dependability* on the job . . . *more satisfaction* for your customer — and *more profits* for you.

YOUR BRUNNER DISTRIBUTOR has the *complete* story on these great new Brunner Air Conditioners. See him — see why you'll sell *more* with the air conditioner that gives you *more* to sell . . .

BRUNNER MANUFACTURING CO., Dept. G-24, UTICA, N. Y.

The Brunner Co., Gainesville, Ga.

In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ontario



BRUNNER
SINCE 1906

Means
more in '54

BRUNNER AIR CONDITIONING IS ADVERTISED IN THE SATURDAY EVENING POST

Circle No. 3 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

Established in 1944 as
THE REFRIGERATION INDUSTRY, this
 magazine has no official affiliation with
 any group, society, or association.

THE STAFF

IRVING B. HEXTER
 President and Publisher

LESTER P. AURBACH
 Executive Vice President

EDWIN M. JOSEPH
 Vice President
 Circulation Director

ALAN J. KICHLER
 General Manager

THEODORE T. QUINN
 Managing Editor

JIM McCALLUM
 Editor

BENEDICT W. HOWES
 Assistant Editor

HAROLD F. BEHM
 Franchise Manager

ALABIC MAUSSER
 Art Director

Address all communications to
**COMMERCIAL REFRIGERATION
 AND AIR CONDITIONING**
 1240 Ontario Street
 Cleveland 13, Ohio
 Superior 1-9622

SALES OFFICES

NEW YORK

LEE HAAS, Mgr.
JOSEPH DEMATTHEW
 40 E. 42 St.—Room 803
 New York 17, N. Y.
 Murray Hill 7-3420

CHICAGO

LLOYD WILLOUGHBY, Mgr.
CHARLES F. GEYER
 520 N. Michigan Ave.—Suite 1613-15
 Chicago 11, Ill.
 Whitehall 3-1655

LOS ANGELES

ALAN T. CAZIER
 3259 Wilshire Blvd.
 Los Angeles 5, Calif.
 Dunkirk 8-2201

LONDON

JOHN A. LANKESTER
 5 New Bridge St., Fleet St.
 London, E.C. 4, England



Published monthly by Refrigeration
 Publications, Inc., an affiliate of Indus-
 trial Publishing Co., which also publishes:

**FLOW
 APPLIED HYDRAULICS
 INDUSTRY AND WELDING
 OCCUPATIONAL HAZARDS
 PRECISION METAL MOLDING**

COMMERCIAL REFRIGERATION & AIR CONDITIONING

FEBRUARY, 1954

VOLUME 11, NO. 2

IN THIS ISSUE

OPPORTUNITY KNOCKS 34
IN THE TRUCK REFRIGERATION FIELD

TIE SALES AGENTS TO A CONTRACT 39

PLAN THE WIRING WHEN YOU PLAN THE FREEZER 40

IS THE BOSS ON THE PAYROLL? 42

CONDENSING COSTS CUT BY EQUIPMENT CONVERSION 43

AIR CONDITIONING SECTION

FUEL COSTS CUT 33% BY REVAMPED HEATING SYSTEM..... 83

"HOME MADE" CONDENSATE DISPOSAL 84

**YEAR-ROUND CONTROL FOR
 AIR CONDITIONING INSTALLATIONS 86**

40 TONS OF PACKAGED COOLING 90

DEPARTMENTS

About People 22

Applications Manual For Contractors 55

BTU's 33

Commercial Refrigerator Sales News 44

Contractor News 69

Here's How 63

New Products 94, 104

Opportunities 79

Refrigeration Industry News 49

Useful Literature 92, 100

Index to Advertisers 114

Subscription rates: United States and possessions—\$3.00 per year, \$5.00 for 2 years; Canada—\$4.00 per year, \$6.00 for 2 years; Single copy price, 30 cents. Foreign subscriptions \$5.00 per year, except the United Kingdom. United Kingdom subscriptions £1.10 per year, payable in Sterling to our London Office. All subscriptions subject to individual acceptance by the publisher.

Not responsible for unsolicited editorial material.

Acceptance under Section 34.64 PL&R, authorized at St. Joseph, Michigan.
 Copyright, 1954, by Refrigeration Publications, Inc.

a Peak Performance Record

for **20**
CONSECUTIVE
YEARS
goes to
Sporlan
FAMOUS 'G' VALVE
with 'C' and 'Z'
Selective Charges



'C' charge
for Suction Temperatures above Zero
'Z' charge
for Suction Temperatures below Zero
plus 'X' charge
for extremely low temperatures

It is true... the record of this famous commercial refrigeration combination dates all the way back to 1934 when Sporlan introduced it to the refrigeration industry. Then, year after year, thousands upon thousands of installations proved their peak performance on every job, every time.

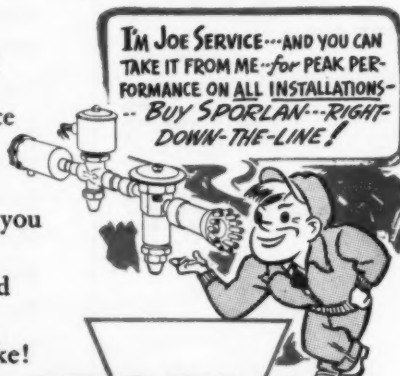
Now ... the Sporlan symbols of this combination have become standard by-words for refrigeration men everywhere, who know and demand peak performance on their commercial refrigeration installations.

They all say ... Give me Sporlan "G" valves with "C" and "Z" Selective Charges for My Money!

Take advantage of this 20 Year Peak Performance Record. Order Sporlan "G" Valves with Selective Charges from your wholesaler today, and see for yourself what Peak Performance really means! Have your wholesaler give you a copy of the Sporlan Catalog, too. With it, you can select the proper thermostatic expansion valve, solenoid valve and Catch-All to get that Right-Down-The-Line Sporlan Peak Performance on every installation you make!

SPORLAN VALVE COMPANY
7525 SUSSEX AVENUE ST. LOUIS 17, MO.

EXPORT DEPARTMENT
89 BROAD STREET NEW YORK 4, NEW YORK



SPORLAN
TV

Circle No. 4 on Reader Service Card

Circle No. 5 on Reader Service Card →



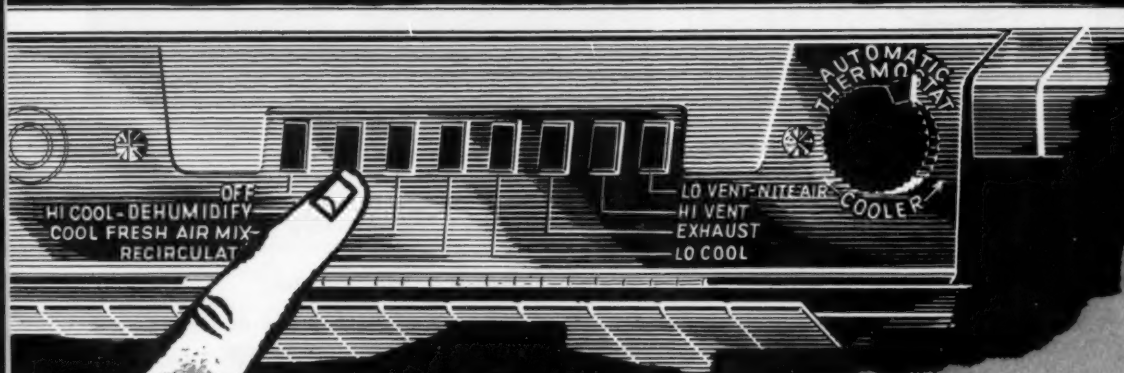
you owe it to yourself
to find out about

Fresh'nd-Aire's new

**completely automatic
electromagnetic
push-button
all-weather air conditioner**

It's FABULOUS! Just select the weather you want—push a button and you get instant, automatic control of both room temperature and air circulation. Exclusive Fresh'nd-Aire Electromagnetic All-Weather Control cools, dehumidifies, circulates, ventilates, filters, exhausts and heats*. You enjoy perfect weather every day of the year.

Automatic Thermostat included on all models—NO EXTRA CHARGE.



New patented Fresh'nd-Aire universal FLEXO-MOUNT window bracket eliminates installation problems—overcomes complicated code restrictions. Mounts unit so flush it hides behind draperies—or allows entire unit to slide forward to any desired depth in room. Elegantly styled in colors of neutral pastel and lustrous gold to complement the decor of America's most luxurious rooms in either home or office.

another
quality product of

CORY
corporation

**JUST PUSH THE BUTTON
OR PERFECT WEATHER**

*Heater included on all models—NO EXTRA CHARGE

Models for every use

Model A412
½ Ton
for areas up to
300 sq. ft.

Model A434
¾ Ton
for areas up to
450 sq. ft.

Model A410
1 Ton
for areas up to
600 sq. ft.

Fresh'nd-Aire Company (Div. of Cory Corp.)
World's Leading Manufacturers of Air Treatment Appliances
221 N. La Salle St., Chicago 1, Ill. In Canada, Toronto 10, Ontario
COUNT ME IN!—I'm going to sell air conditioners in 1954 and want full details about Fresh'nd-Aire.

54-36

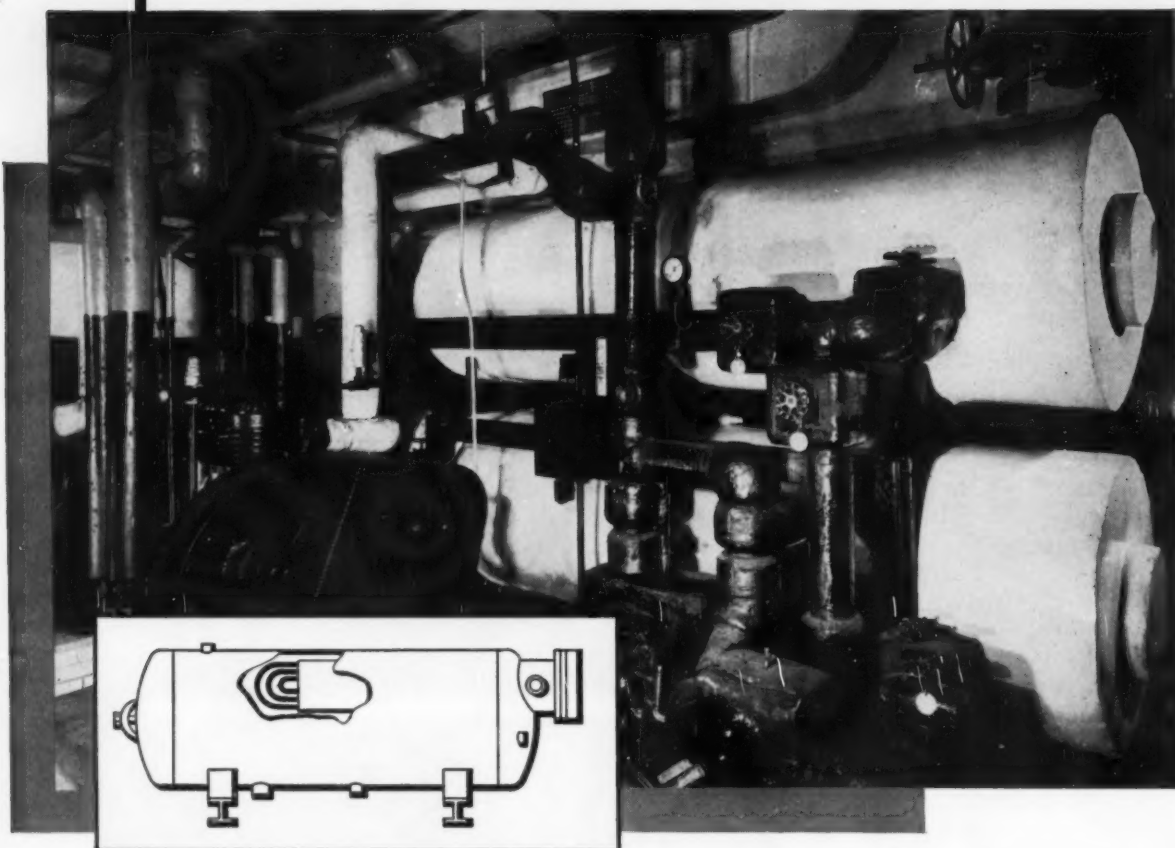
Company Name _____

Address _____

City _____ Zone _____ State _____

I am a ☐ distributor ☐ dealer

keep up with the **Times**
 pipe cold drinking water to all working areas
 from a **p-k** storage water chiller



Fresh, chilled drinking water is efficiently supplied
 to all 17 floors of the New York Times building in New York
 by means of a new **p-k** combination
 water storage tank and built-in chiller.

With this design, smaller chilling surface
 and refrigerator compressor capacity can
 be used and the load factor is improved.
 Individual water coolers are dispensed with
 and concentration of cooling facilities in
 one central location reduces initial invest-
 ment and facilitates servicing. Fluctuating
 water requirements are easily met without

temperature change. Any new or present
 compressor equipment can be used.

p-k storage water chillers are available
 in many sizes and in various kinds of
 materials to suit individual requirements.
 These same storage cooler units are appli-
 cable to any liquid cooling application, in
 process and other industrial plants.

Write today for illustrated literature and engineering suggestions.
 Ask for Catalog No. 101.



the **Patterson-Kelley Co., inc.**

320 Burson St., East Stroudsburg, Penn.

1917

101 Park Avenue, New York 17 • Railway Exchange Building, Chicago 4 • 1700 Walnut Street, Philadelphia 3 • 96-A Huntington Avenue, Boston 16 • and other principal cities

Circle No. 6 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

**WHERE
SOLENOID**

SNAKE



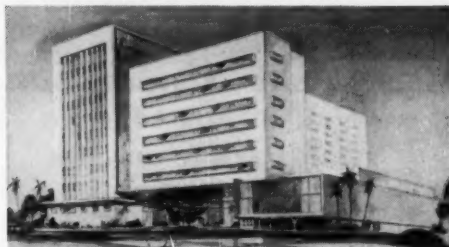
**WOULD DISTURB
GUESTS' SLEEP**



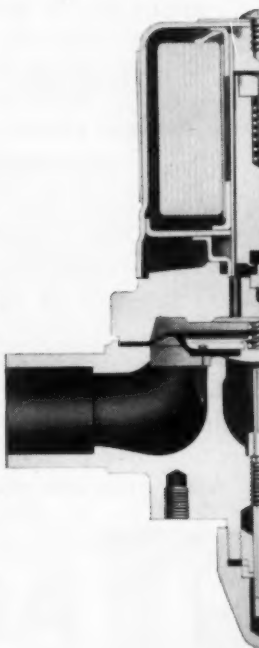
SOLENOIDS

Quietly **CONTROL ROOM AIR CONDITIONING**

...at the luxurious, new
Empress Hotel, Miami Beach, Florida



Air Conditioning by Airtemp Construction Corp



**All J-E Solenoids are
unconditionally guaranteed
for 18 months**

- **TIGHT SEATING**—no bubble tolerance.
- **SIMPLICITY**—only two moving parts.
- **LONG LIFE**—cool coils.
- **DURABILITY**—all corrosion-resistant material.
- **OPENING PRESSURE DIFFERENTIAL**—higher than most others on the market.

Each guest room in the ultra-modern Empress Hotel has individually controlled, "personalized" air conditioning. On a job like this the solenoid valves must be rugged and dependable to avoid constant trouble calls . . . and they must operate so quietly as to not disturb the lightest sleeper.

Only J-E *advanced design* solenoids meet these requirements. Their amazingly simple design has only two moving parts — the main diaphragm and the plunger. There is no impact action or loose mechanical linkage to cause noisy operation.

This permanently quiet operation is just one of the many features that make J-E solenoids superior to any solenoid you've ever used. For complete information on the many ways J-E solenoids can save you time and trouble in controlling Freon, brine, ammonia, steam, water, air and gas, call your wholesaler or write:



SOLENOIDS THAT SURPASS THEIR SPECIFICATIONS

JACKES-EVANS MANUFACTURING COMPANY

Controls Division: 4427 Geraldine Avenue • St. Louis 15, Missouri

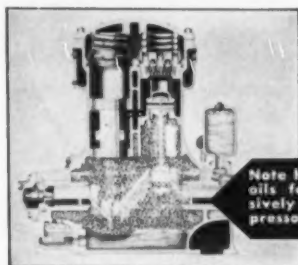
Circle No. 92 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1954

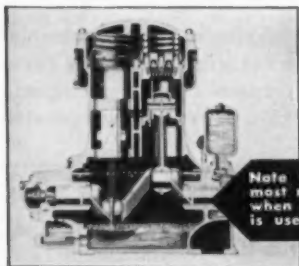
ANSUL
the finest
REFRIGERATION OIL
at any price
IS
NON-FOAMING!



**NOTE THE DIFFERENCE BETWEEN
 ORDINARY OILS...WHICH FOAM
 ... AND ANSUL NON-FOAMING
 REFRIGERATION OIL**



Note how ordinary
 oils foam exces-
 sively when com-
 pressor starts.



Note there is al-
 most no foaming
 when ANSUL OIL
 is used.

When a compressor starts, the surge of the refrigerant causes ordinary oils to foam. This results in a loss of oil from the compressor and causes other harmful effects in the system. ANSUL NON-FOAMING OIL eliminates the problems which result from foaming and thereby insures maximum lubricating efficiency.

NOW ... MORE THAN EVER ... ANSUL is the FINEST REFRIGERATION OIL *at any price!* In addition to the features which have made it outstanding in the past ...

High Lubricity, High Stability, Low Moisture, and Low Wax ... a new and vital improvement has been made

... ANSUL OIL IS PROCESSED TO PROVIDE NON-FOAMING CHARACTERISTICS ... a distinct advancement in the science of refrigeration lubrication.

Here are some of the advantages provided by the NON-FOAMING characteristic of ANSUL OIL:

- INSURES MAXIMUM LUBRICATION.
- IMPROVES EVAPORATOR EFFICIENCY.
- PREVENTS DAMAGE TO COMPRESSOR VALVES.
- REDUCES DANGER OF PLUGGED CAPILLARIES.
- REDUCES DEPENDENCY ON OIL SEPARATORS.

ANSUL is the LARGEST SELLING REFRIGERATION OIL sold through Refrigeration Wholesalers ... EXCLUSIVELY.

And there are many other reasons why refrigeration men persistently prefer ANSUL.



ANSUL
Chemical Company

REFRIGERATION DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF REFRIGERATION PRODUCTS, INDUSTRIAL AND FINE CHEMICALS, LIQUEFIED GASES AND FIRE EXTINGUISHING EQUIPMENT

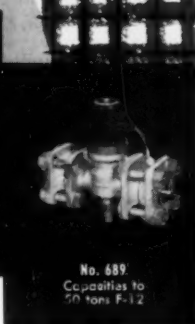
Circle No. 8 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

Have a Solenoid Problem?

LET US HELP YOU SOLVE IT!

If you need a Solenoid Valve for air, water, steam or refrigerants in capacities to 50 tons Freon-12, call on **DETROIT**. Chances are, you'll find an immediate solution with a standard **DETROIT** model. If not, for some special applications **DETROIT** will design a valve to meet your requirements. Either way, you'll find it pays to call on **DETROIT**—your Specialist in Solenoids.



5900 TRUMBULL
DETROIT 8, MICHIGAN

ESTABLISHED AS **DETROIT LUBRICATOR COMPANY** IN 1877

Controls **CORPORATION**

Division of American Radiator & Standard Sanitary Corporation

Canadian Representatives in Montreal, Toronto, Winnipeg—Railway and Engineering Specialties, Ltd.

AUTOMATIC CONTROLS for REFRIGERATION



AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

Serving home and industry

AMERICAN LUBRICANTS • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

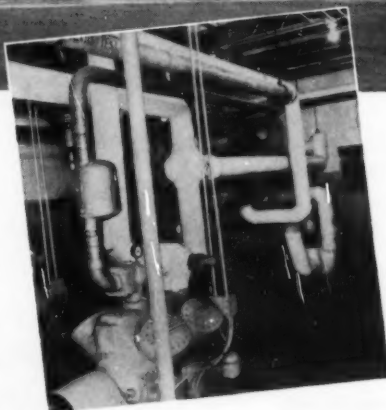
Circle No. 9 on Reader Service Card
and AIR CONDITIONING • FEBRUARY, 1954

Acme furnished the package for RYAN BUILDING 100-TON COOLING SYSTEM



CONTRACTOR — Art Calvert Sales & Service
CONSULTING ENGINEER — R. L. Duffer

When the Florida Power & Light Company decided to air condition its Ryan Building offices in Miami, Florida they took the easy way of installing a system by using an Acme Flow-Therm Packaged Water Chiller. This unit consisting of a two-circuit Acme Dry-Ex, two Acme HX Heat Exchangers, and two Acme STF Condensers furnishes 300 GPM of 46° water to the system. It is used in conjunction with two 50 HP Carrier Compressors.



Buying a "package" gave the company a perfectly balanced unit, greatly reduced their installation time and expense, saved space, and, being an Acme Flow-Therm, enabled them to select a packaged unit specifically tailored to their job requirements.

The Flow-Therm is the latest addition to the Acme line of air conditioning and refrigeration products. It is the answer to the contractor and user who wants the benefits of a packaged unit along with the chance to specify matching Acme components. It can be used with any model or make compressor. See your Acme representative for more information on the Flexible Flow-Therm.



ACME INDUSTRIES, INC.

Mfgs. of a complete line of Air Conditioning and Refrigeration Equipment

JACKSON, MICHIGAN



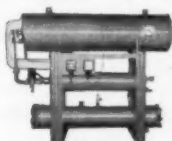
Evaporative Condensers
Cooling Towers
Floor-type Unit Coolers



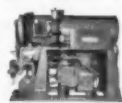
Direct Expansion
(Dry-Ex) and Flooded
Liquid Chillers
Heat Exchangers,
Oil Separators



Shell and Tube, Shell
and Coil Condensers
Receivers, Pipe Coils



Packaged Liquid
Chillers to 225 tons



Flow-Temp Heat
Pumps
Flow-Cold Liquid
Chillers



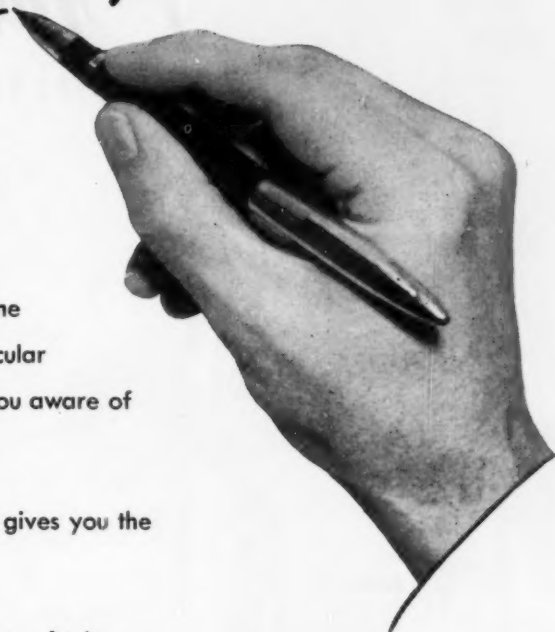
Remote Room
Conditioner

Continuously serving the air conditioning and refrigeration industry since 1919

TO REFRIGERATION WHOLESALERS EVERYWHERE

Tubemanship

—THAT'S IT IN A WORD



"Tubemanship" has been coined by Wolverine as an identifying word to describe our particular process of making tube, intended to make you aware of the fact that there is a difference in tubing.

And that difference, let us point out, is what gives you the extra value in your purchases of tubing.

Here at Wolverine we consider the production of tube an art, a combination of skill and long experience that results in tubing that has a clean, mirror-like finish inside; it is dry, uniform and easy to bend.

It is supplied in 50-ft. lengths in coils protected from possible damage in sturdy corrugated cartons which carry all specifications on one end for quick reference.

Here's a tubing you can use with confidence.

Always ask for Wolverine by name.

WOLVERINE TUBE DIVISION of Calumet and Hecla, Inc.,
1405 Central Avenue, Detroit 9, Michigan.



WOLVERINE TUBE DIVISION

OF CALUMET & HECLA, INC.

Manufacturers of Quality-Controlled Tubing

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA

• Sales Offices in Principal Cities

EXPORT DEPT., 13 E. 40th ST., NEW YORK 16, N. Y.

Circle No. 11 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1954

The Open Door for '54



In '53 the LEHIGH TEAM pushed the sales curve clear off the top of the chart. It was the best year in Lehigh history. You might be interested to know what did it.

Was it *Engineering? Design? Quality?* All played a part.

But we believe that it is mainly because Lehigh keeps the door open to business — and an open mind to your needs and viewpoint.

Lehigh's whole approach to refrigeration is one of service and development — anticipation and delivery. You saw part of this in '53 in Lehigh's major contributions to passenger car air conditioning and better truck refrigeration. You saw it too, in the entire BLU-COLD line of condensing units. The 'cleanest', finest and most reliable units in the industry.

Lehigh's plans for '54 are now being carried out. Included are greatly expanded production, the introduction of new models and widened customer services. More of what you seem to like.

So we repeat what we have so frequently said —
*"If you buy, sell, service or install refrigeration —
it will pay you to know Lehigh better!"*

The LEHIGH TEAM



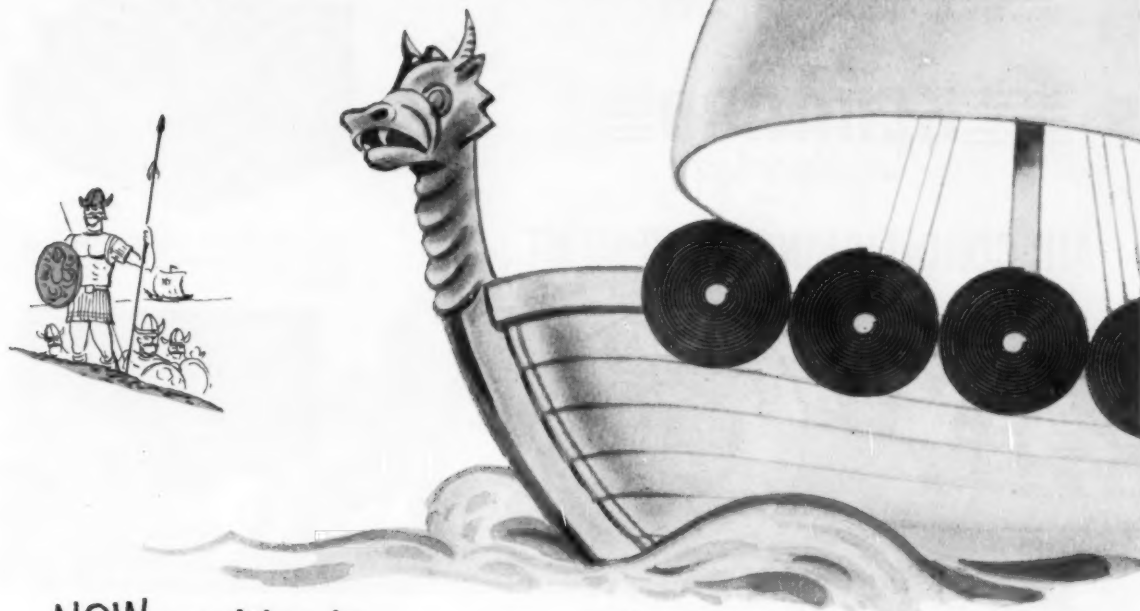
Lehigh BLU-COLD CONDENSING UNITS AND SYSTEMS

Lehigh Manufacturing Co., Lancaster, Pa.

Export Dept., 13 E. 40th St., N. Y.

VIKING.....

a sign of pioneering...



NOW resulting in

easy to handle **VIKING COPPER TUBE**

STRENGTH THROUGH ANNEALING



Viking copper tube is annealed with precision uniformity in electric annealing furnaces. The uniform temper insures speedy, efficient, trouble-free fabrication and strength.

EASY TO BEND AND FLARE



Whatever the application, Viking copper tube makes the work go faster because it is easier to fabricate. Viking refrigeration tubing is soft and pliable — can be formed, flared and expanded quickly without danger of fracturing and splitting.

CLEAN AND DRY



Triple-sealed Viking tube avoids trouble before it starts — remains extremely dry and absolutely free of dirt. The seal is made to pass through any opening large enough for the tube itself.

Nowhere in recorded history is the "pioneer spirit" more typically exemplified than in the daring explorations of the Vikings. It took brave men with strong convictions to venture into unknown seas in the face of superstitions and dread fears. When the first Vikings landed in North America some 400 years before Columbus, the pioneering of the Vikings paid the world its most precious dividend.

Today in industry another type of "Viking Pioneering" is paying big dividends—dividends in the form of the finest copper tubing ever manufactured for the commercial refrigeration and air conditioning industry.

Viking copper tubing is the result of the collective efforts of "pioneers" seeking always to create a tubing that will do the job better, faster, and at lowest cost.

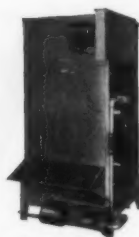
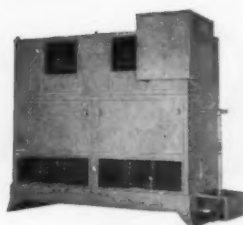
VIKING *copper tube co.*
CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER AND ALUMINUM TUBING

Circle No. 13 on Reader Service Card
and AIR CONDITIONING • FEBRUARY, 1954



COOLING TOWERS—Air Conditioning, Refrigeration, or Industrial Applications. Outdoor-Indoor. 3 to 75 Tons. Catalogs No. CT-1 and KT-2.



EVAPORATIVE CONDENSERS—Indoor-Outdoor. 3 to 75 Tons. Catalogs No. EC-1 and EK-3.



AIR CONDITIONING EQUIPMENT



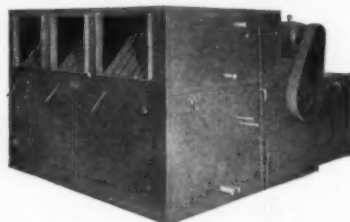
SHELL AND TUBE LIQUID CHILLERS

Kennard research leads the field with this New and Revolutionary Liquid Chiller.

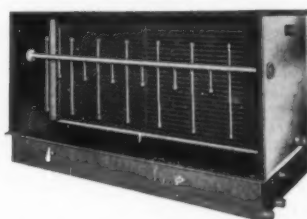
- ★ Internally finned tube.
- ★ Downward feed of refrigerant and oil.
- ★ Guaranteed oil return.
- ★ Controlled refrigerant distribution.
- ★ No freon head gasket.

Sizes 2 to 200 tons

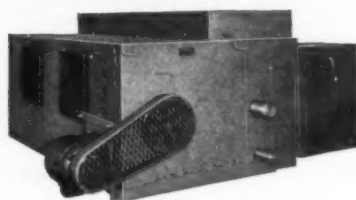
Write for Catalog LC-1.



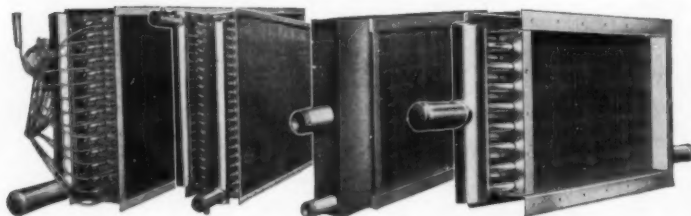
MULTI-ZONE UNITS—Sizes up to 36 sq. ft. Cooling Coil Face Area. Catalog MZ-1.



SPRAYED COIL DEHUMIDIFIERS—56 Sizes. Coil Face Areas to 81 sq. ft. Catalog No. SC-1.



HEATING AND VENTILATING UNITS—Air Volumes 300 to 28,800 CFM. Catalog No. HV-1A.



FINNED COILS—Direct Expansion Coils, Water Coils, Steam Distributing Tube Coils, Standard Steam Coils. Sizes up to 36" wide x 120" long. Catalog No. BC-1.

Write for name of nearest representative and catalogs needed.



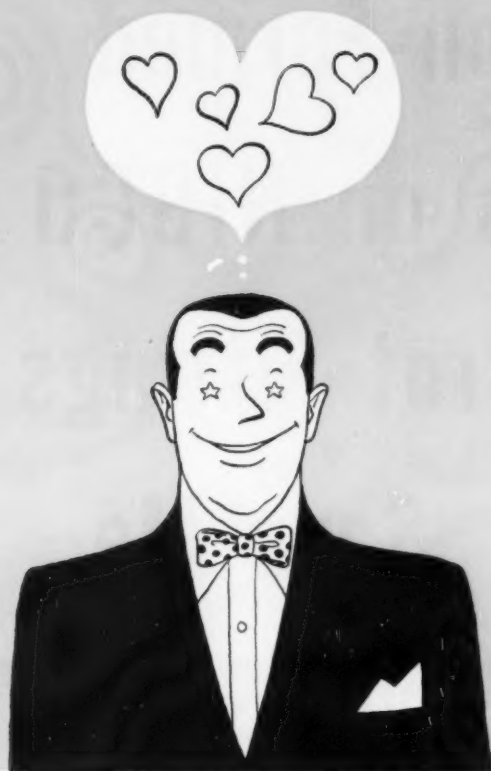
AIR CONDITIONING BLOWER UNITS—13 Sizes. 300 to 21,600 CFM. Horizontal or Vertical. Catalog No. AC-1.

KENNARD CORPORATION • 1827 S. HANLEY ROAD ST. LOUIS 17, MO., U.S.A.

Circle No. 14 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

When he's **RAPT**.....but not **WRAPPED UP**...

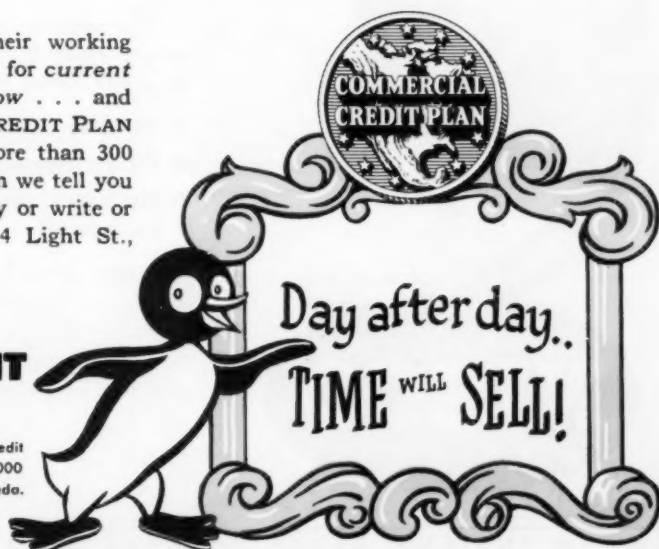


Be ready with **COMMERCIAL CREDIT PLAN**
financing to wrap him up

MOST of your prospects need their working capital and usual lines of credit for *current* operations. To make sure they buy *now* . . . and from **YOU** . . . include **COMMERCIAL CREDIT PLAN** financing in your recommendations. More than 300 offices to serve you nationally. When can we tell you our story? Phone our office in your city or write or wire **COMMERCIAL CREDIT CORP.**, 14 Light St., Baltimore 2, Maryland.

COMMERCIAL CREDIT CORPORATION

A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$135,000,000 . . . offices in principal cities of the United States and Canada.





"Precision-Formed Cups on NIBCO Wrot Fittings Save Me Silver Solder"



Solder cups on NIBCO Wrot Fittings always fit the tube *just right*. That's because they are formed from tubes with mirror-polished dies, held to "gnat's whisker" tolerances.

Through its continuing program of research and engineering NIBCO has developed a full line of wrot fittings which have these important advantages:

- Heat up fast—save time.
- Fit exactly—save solder.
- No weak spots—joints are stronger than the tube itself.

It's just good business to specify NIBCO Wrot Fittings. Costwise they are a minor part of an installation yet they are mighty important protection against fitting failure, loss of refrigerant and loss of your time. *To be sure, specify NIBCO.*

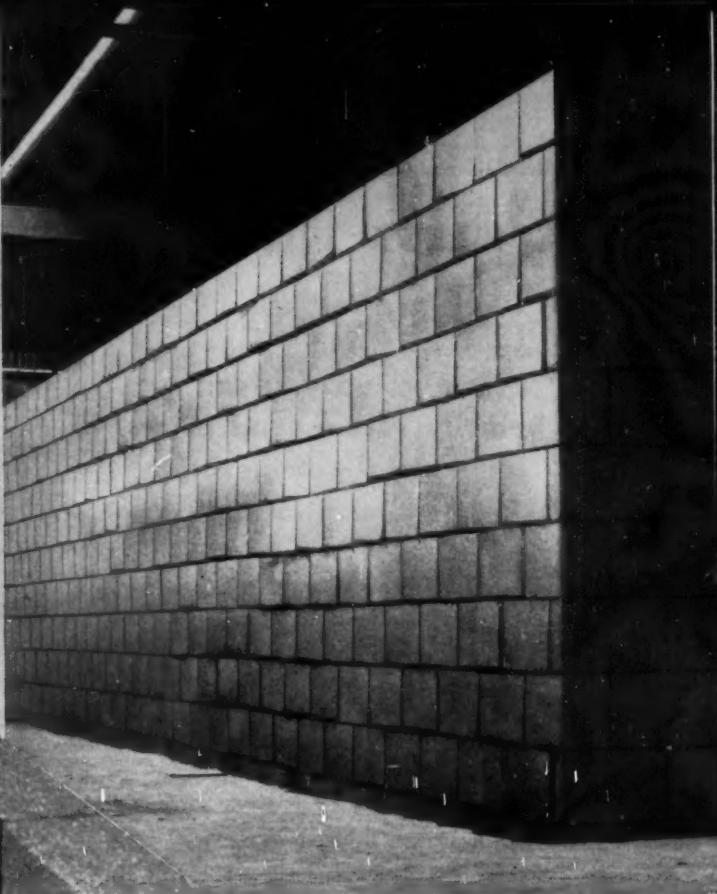
NORTHERN INDIANA BRASS CO., 214 PLUM STREET, ELKHART, INDIANA

Circle No. 16 on Reader Service Card





Exterior of Kraft Foods' City Sales Cooler, Chicago, 90' x 120' constructed of free standing, 4-inch FOAMGLAS walls with suspended metal-deck-forming ceiling insulated with FOAMGLAS. FOAMGLAS walls extend to a height of 14' 6" above floor level. Walls were carried two feet below existing floor level to prevent thermal short circuit.



Free standing **FOAMGLAS** insulating walls, erected without studs, cut costs for KRAFT

Kraft Foods Company cut construction costs by using the high compressive strength and rigidity of FOAMGLAS to construct two coolers *within* the existing structure of their Food Storage Building in Chicago. Substantial savings were realized by Kraft when they were able to use the unique strength and rigidity of FOAMGLAS to erect self-supporting free standing FOAMGLAS walls without temporary studs . . . to

construct the coolers *and* insulate them in one step with one quality material.

With free standing FOAMGLAS construction, Kraft got not only strong, durable walls and inner partitions, but outstanding insulation performance as well. Since FOAMGLAS *can not* absorb damaging moisture, it maintains *constant* high insulating efficiency without costly maintenance. Moreover, FOAMGLAS is fire-proof, rot-proof and vermin-proof.

Let FOAMGLAS work for *you* . . . by giving you constant, lasting insulating efficiency plus unique design advantages. Send now for a sample of this remarkable insulation and our new booklets covering use of FOAMGLAS to insulate walls, ceilings, roofs, floors, piping and equipment in refrigerated structures or normal temperature buildings. Write, indicating your specific interest.

PITTSBURGH CORNING CORPORATION

One Gateway Center • Pittsburgh 22, Pa.

FOAMGLAS®

the cellular, stay-dry insulation



Pittsburgh Corning
also makes
PC Glass Blocks

Pittsburgh Corning Corporation, Dept. I-24
One Gateway Center, Pittsburgh 22, Pa.

Please send me a free sample and the following brand new FOAMGLAS literature:

- ☐ New booklet on FOAMGLAS building insulation.
- ☐ New booklet on FOAMGLAS low temperature insulation.
- ☐ New folder on FOAMGLAS pipe insulation.
- ☐ New folder on FOAMGLAS insulation for tanks and other equipment.
- ☐ Send engineer to discuss specific problem.

Name

Company Title

Address

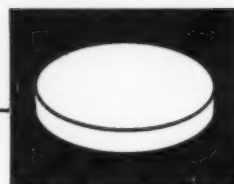
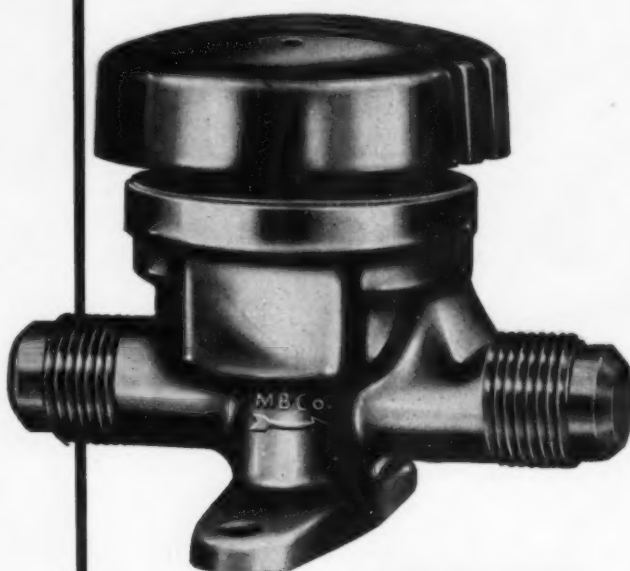
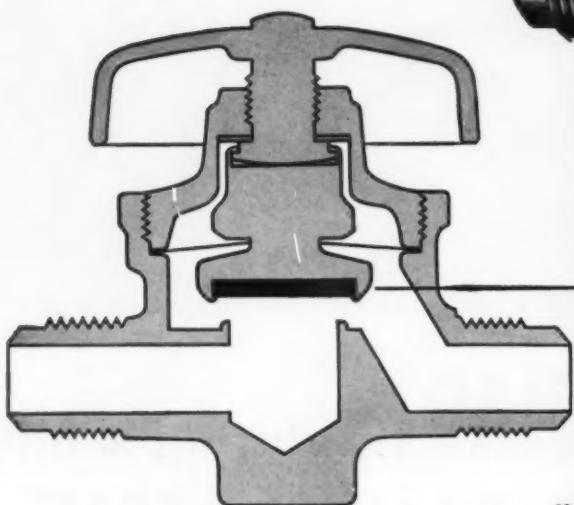
City Zone State

MUELLER BRASS CO.

PACKLESS LINE

VALVES

a fine valve you can
heartily recommend in any
commercial refrigeration
installation



**tough, resilient molded
nylon stem disc insures
positive shut-off**

Mueller Brass Co. STREAMLINE Packless Line Valves are the safe, economical and reliable forged brass valves that help increase the dependability of any commercial refrigeration system. Because of their durable construction they can take considerable punishment in difficult applications and still continue to give efficient, lasting service.

Good design and fine craftsmanship account for the splendid quality of these valves. The comfortable 2-1/2" diameter hand wheel provides good leverage for easy opening and closing. 1-1/2 turns of the hand wheel closes it. A neoprene back seal cushion prevents stem seizures and gives double protection against leakage. The nylon stem disc

withstands regular charging board usage and it is chemically inert to all standard low-pressure refrigerants. The disc is resilient and shuts off the flow easily and positively even when obstructions become lodged against it. Large metal diaphragms have been pressure-tested for 100,000 openings without a failure. A "Full-Flo" seat area and refrigerant passage virtually eliminates pressure drop.

STREAMLINE Packless Line Valves are sturdy and compact—only 3" high—with in-line ports for quick, easy installation. They are available in 1/4", 3/8", 1/2" and 5/8" sizes with flare or solder type end connections. Available from your refrigeration wholesaler.



**DRIERS
AND
FILTERS**



**WROUGHT COPPER
FITTINGS AND
COPPER TUBING**



**FLARE
FITTINGS**



**LIQUID
INDICATORS**



VALVES



**STREAMLINE Packless Line
Valves are individual and
multiple packaged in
sturdy metal-edge con-
tainers.**



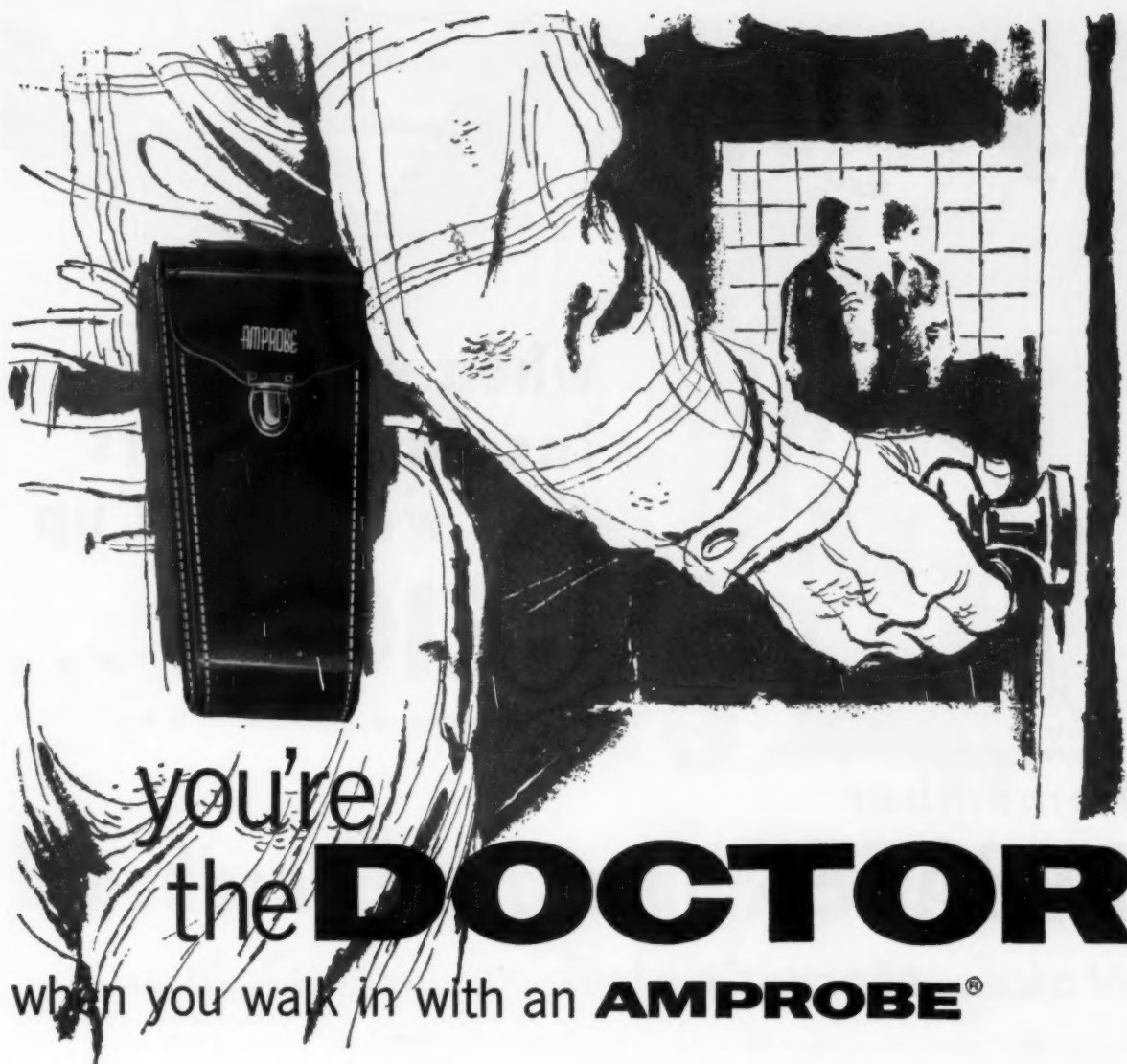
**Write for our latest cata-
log describing the com-
plete line of Mueller
Brass Co. STREAMLINE
refrigeration products.**



MUELLER BRASS CO. PORT HURON 10, MICHIGAN

Circle No. 18 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION



you're
the **DOCTOR**
when you walk in with an **AMPROBE®**

What the stethoscope is to the Doctor, the Amprobe snap-around volt-ammeter is to the electrician, contractor, plant maintenance man, refrigeration, motor and appliance serviceman.

With an Amprobe, you can measure current instantly without having to shut down equipment. You can measure voltage with instrument accuracy, on a full-size calibrated scale. All this with one rugged and inexpensive pocket-size tool!

Eliminate guesswork, save time and money on practically every call, reduce expensive call-backs, gain respect as a well-equipped professional—"Amprobe" it! You'll wonder how you ever got along without one.

There is an Amprobe for every job, every budget

AMPROBE Jr.

Now every man can afford to carry an Amprobe. 7 models from 0-10 to 0-100 amps; choice of 0-125/250 or 0-150/600 volt A-C range. \$19.85



AMPROBE 300

The ideal Amprobe model for all-around work. Covers 6 ammeter ranges up to 300 amps, and 3 volt-meter ranges up to 600 volts A-C. \$49.50



AMPROBES 600 & 1200

Similar to 300, but designed to handle extra-heavy loads—up to 600 and 1200 amps A-C respectively. Model 600 is \$59.50. Model 1200 is \$67.50.



Write for valuable service bulletins showing how to save time and money with an Amprobe. Mail coupon to: PYRAMID INSTRUMENT CORPORATION, LYNBROOK, NEW YORK.
(Export Div.: 458 Broadway, New York 14).

Send for these free Amprobe service bulletins:

**Pyramid Instrument Corp.
Dept. CR-24, Lynbrook, N. Y.**

Please send me the Amprobe service bulletins checked below:

- ☐ How to cut costs and land more jobs
- ☐ Trouble-shooting electric motors
- ☐ How to boost service profits
- ☐ Electrical servicing of hermetic units

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

AMPROBE® snap-around volt-ammeters

and AIR CONDITIONING • Circle No. 19 on Reader Service Card
FEBRUARY, 1954



when you need
insulating parts
that won't pick up
WEIGHT ...

Remember

RUBATEX *Insulation Hardboard* **Makes More Cents***

Light weight Rubatex Insulation Hardboard (only 4½ lbs. per cu. ft.) remains constant. Here's an insulating material with zero moisture pick-up . . . does not pick up weight as many other insulating materials do. A mighty important factor in insulation applications today!

PLUS

*Lowest heat conductivity of any known structural material—making it far superior for all forms of thermal insulation.

*Rigid and strong — compression strength 60 p. s. i.

*Rot and vermin proof—will not breed or feed anything objectionable.

TYPICAL INSTALLATIONS

Abbotts Dairies, Inc.
Philadelphia, Pa.

Fruehauf Trailer Co.
Chicago, Ill. — Detroit, Mich.

Geo. A. Hormel & Co.
Austin, Minn.

Grumman Aircraft Engineering Corp.
Bethpage, L. I., N. Y.

The Liquid Carbonic Corp.
Chicago, Ill.

Avco Manufacturing Corp.
Cincinnati, O.

Food Fair Stores, Inc.
Philadelphia, Pa.

Write for our "Design Data Bulletin RBH-53", Dept. CR-2 Great American Industries, Inc., Rubatex Division, Bedford, Virginia.



RUBATEX *CLOSED CELLULAR RUBBER*



Chase comes through

with Crimped End-Seal Refrigeration Tube



There's a double purpose to the crimped end-seal on all Chase Extra-Soft dehydrated Refrigeration Tube.

First of all, it locks out harmful moisture, dirt and air.

Secondly, unlike the old-style flat seal, it is not necessary to cut off the end to pass the tube through a small opening no larger than the tube itself.



Connected with Chase Solder-Joint Fittings, the Chase Extra-Soft Copper Refrigeration Tube forms a pressure-tight, leak-proof installation that can't be beat.



Write today for free book on sizes, weights and uses of Chase Copper Refrigeration Tube... and Solder-Joint Fittings.



Chase



BRASS & COPPER

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper

Albany †	Cleveland	Kansas City, Mo.	New York	San Francisco
Atlanta	Dallas	Los Angeles	Philadelphia	Seattle
Baltimore	Denver †	Milwaukee	Pittsburgh	Waterbury
Boston	Detroit	Minneapolis	Providence	
Chicago	Houston	Newark	Rochester †	
Cincinnati	Indianapolis	New Orleans	St. Louis	(† sales office only)

Circle No. 21 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1954

ABOUT PEOPLE

Philip B. Hoppin has been appointed manager of advertising and sales promotion for General Electric Co.'s Air Conditioning Div. Hoppin has been associated with G-E since 1950. Prior to his new appointment, he was supervisor



of advertising and sales promotion for the Air Conditioning Div.'s home heating and cooling and commercial products departments. He has had a wide advertising and sales promotion experience with other manufacturers in the heating and cooling field.

Three appointments in its manufacturing operations have been announced by Flexonics Corp. **Carl W. Schwendener** has been named factory manager of the Elgin Div., **Fred A. Abben** has been appointed industrial relations manager and **Richard Benton** has been appointed factory manager at the Rock Falls, Ill. plant.

Frank D. Klein has been appointed sales manager for the domestic and export sales for Schnacke, Inc. Joining Schnacke from the Frigidaire Sales Div. of General Motors Corp., Klein's background includes former connections with both Westinghouse and Penn Controls. He is the author of a number of books on manufacturing processes and sales.



Bernard Brezinski has been appointed service engineer for Cory Corp., with headquarters in the Cory service department in Chicago. He will serve as special assistant to George Sedlak, chief service manager, and will devote most of his time to organization, education and supervision of Cory's national field service stations. Before joining Cory, Brezinski was a partner in his own refrigeration and television service business.

John D. Harris has been elected president and **Roger D. Jacobs** has been elected executive vice president.



J. D. Harris



R. D. Jacobs

ident of Warren Co., Inc. Harris, formerly executive vice president, succeeds Virgil P. Warren, who remains in his present capacity of chairman of the board of directors. Jacobs remains in charge of sales for the firm. Harris is a past president of the Commercial Refrigerator Manufacturers Association.

Edward D. Sprang has been appointed to the Harrisburg, Pa. sales office of Trane Co. A member of the Trane graduate training program, Sprang was formerly associated with the company's Newark office.

Russell E. Davis of St. Louis has been appointed to represent the Allin Mfg. Co. in southwestern Indiana, western Kentucky, southern Illinois, and eastern and southern Missouri. **Richard D. Hollingsworth** of Cleveland will represent Allin in the states of Ohio, Michigan, and eastern and northern Indiana.

J. E. Hailey has been appointed refrigeration products representative



for McQuay, Inc., in the Kansas-Missouri territory. He was formerly associated with Central Supply Co., as assistant manager in the Heating-Air

Conditioning Div. Before his association with Central, Hailey was a sales engineer with J. E. Hurston Co., Memphis.

W. H. Dennison has been appointed west coast regional manager and **John C. Crites** has been named service representative for Remington Corp. Dennison has held executive sales positions during the past 20 years with Gibson, Borg-Warner and Chrysler Airtemp. Crites will supervise service of window and console units in five South-eastern states.

E. R. Glauber has been appointed national sales manager for air conditioning by Emerson Radio & Phonograph Corp. Glauber will continue in the capacity of director of Emerson Distributing Companies in addition to assuming his new duties of directing the sales activities of Emerson's air conditioning units. He joined Emerson Radio last fall and was previously associated with Admiral Corp., serving there as vice president and general manager of its New York distributing division.



Kenneth C. Davidson has been appointed sales promotion manager for Drayer-Hanson, Inc. Davidson will head a new sales promotion department under A. L. Hanson, vice president in charge of sales and

engineering. He was formerly active in Southern California as an advertising account executive. He also directed an advertising and sales promotion enterprise, K. C. Davidson, Inc., in Los Angeles.



W. G. Smith

William G. Smith has been appointed district manager for the east central territory for Servel, Inc. Smith has been a member of the commercial refrigeration division's field service organization since 1951. Smith will make his headquarters in Cuyahoga Falls, Ohio. **Charles M. Heathman**, formerly district manager in the east central territory, has been transferred to the west central territory with headquarters in Chicago.

Warren B. Campbell has been named sales manager, **John C. F. Geib** has been named assistant sales manager and director of sales training, and **Charles V. Claybourn** has been named manager of the sales promotion department by Sunroc Co.

Changes in sales personnel of Goulds Pumps, Inc., have been announced by the firm. **J. B. Darden**, formerly in charge of water system sales at the factory, becomes manager of Goulds' Chicago office. In that capacity he succeeds B. F. Barnett, who is relinquishing his duties for reasons of health. **S. A. Bunis**, formerly manager of the Boston branch, is transferred to the factory as assistant to E. E. Backlund, general sales manager, and will devote his time to sales operations of the water system division. **C. R. Brower**, former manager of the company's Pittsburgh branch, takes charge of the Boston branch, and **P. A. Thompson**, formerly of the Chicago sales staff, becomes manager of the Pittsburgh branch.

Emil T. Johnson has been appointed director of production and engineering for Union Asbestos & Rubber Co. His new duties will entail general supervision of all production and engineering for Unarco including the recently acquired heating and air conditioning facilities at the Greenville, Ill., plant. He automatically becomes a member of the company's operating committee. He has served as head of production and engineering of Unarco's fibrous products division for the past year.

William Bynum, executive vice president of Carrier Corp. has been elected a director of the National Association of Manufacturers. With Carrier for the past 23 years, Bynum became executive vice president in 1951 and was named a director of the company in 1952.

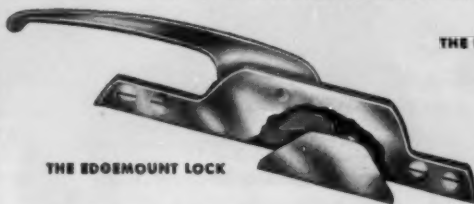
John E. Hanes, vice president of Minneapolis-Honeywell Regulator Co. has been appointed to the Building Research Advisory Board,

*Features
that spell
value...*

Grand Rapids Brass Refrigerator Hardware

Whether for original equipment or replacement, Grand Rapids Brass locks and hinges provide a rugged, handsome finishing touch that spells quality and value. And they cost no more. That's why leading manufacturers and jobbers specify Grand Rapids Brass. You can be sure with any Grand Rapids Brass lock—when it trips... it grips!

THE ALL-NEW EDMOUNT LINE



THE EDMOUNT LOCK



THE EDMOUNT
HINGE

The NEW, heavy-duty Edgemount Lock is chrome-plated, operates easily, installs quickly. Surface-mounting eliminates mortising of wood or stamping. Fully reversible lock mounts on either side of door, handle up or down. Strike adjustment $\frac{3}{8}$ " to $\frac{1}{2}$ ".

Oil impregnated bronze bushings in this hinge provide two-way protection against tension and thrust. Requires no lubrication. A heavy-duty hinge.

THE POPULAR SURFACE-MOUNTED LINE



Reversible Lock



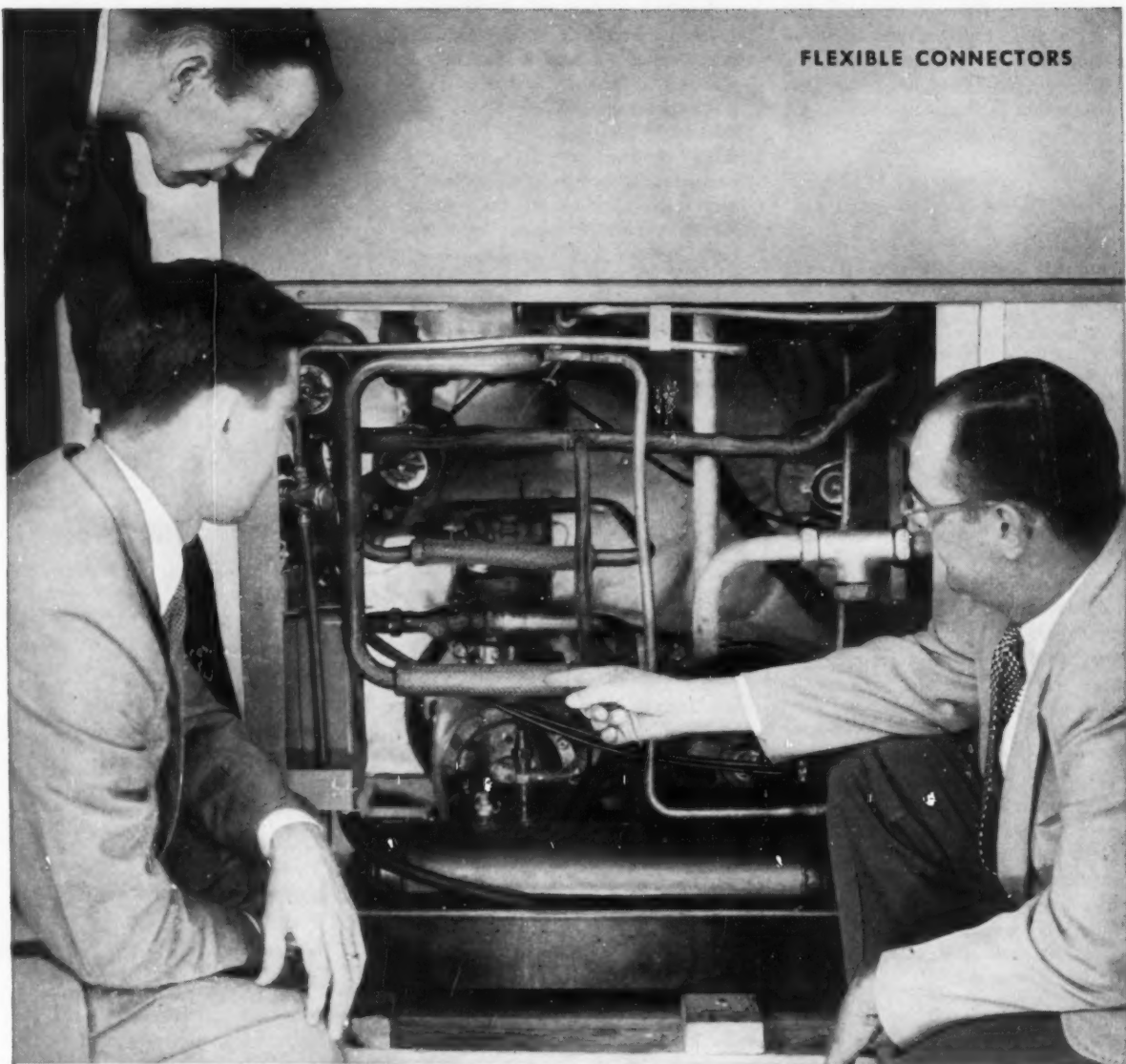
Reversible Hinge

Write for Complete Illustrated Information

Grand Rapids Brass Company

DIVISION OF CRAMPTON MANUFACTURING COMPANY
GRAND RAPIDS, MICHIGAN

Suppliers to the Nation's Leading Automotive, Refrigeration and Plumbing Manufacturers



REFRIGERANT LINES ON G-E HEAT PUMP are equipped for long, safe, trouble-free service with American Vibration Eliminators.

G-E Heat Pump works in a whisper with American Vibration Eliminators

It heats—it cools... *without burning fuel!* General Electric's new heat pump uses only air and electricity. To cool, it pumps heat to the outdoors. To heat, it takes warmth from "cold" outdoor air. And it works in a whisper...none of the usual vibration and noise you expect from a man-size compressor.

American Seamless Flexible Metal Connectors—called Vibration Eliminators—absorb and dampen this noise and vibration in the piping... as well as provide for expansion.

They guard refrigerant lines against fatigue-cracking. Seamless and pressure-tight, these connectors convey costly Freon safely. They come in standard copper tube sizes, and can be easily and permanently installed.

G-E Engineers report complete satisfaction with these connectors—as do many others in the air-conditioning and refrigeration field, from design engineers to servicemen. For more specific information on how American Vibration Eliminators can

Circle No. 23 on Reader Service Card

be adapted to your requirements, write for Bulletin VE-310R to: *The American Brass Company, American Metal Hose Branch, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Co., Ltd.*

53243

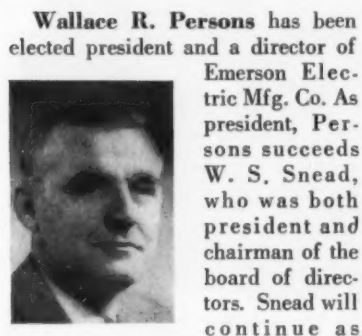
WHEREVER CONNECTORS MUST MOVE

AMERICAN

flexible metal hose and tubing

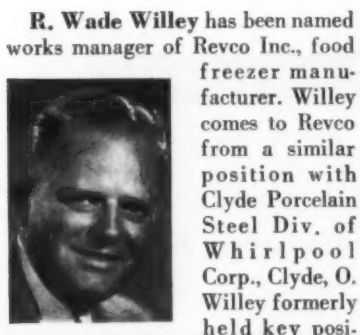
an ANACONDA® product

a division of the National Academy of Sciences. The Building Research Advisory Board is a coordinating and fact-finding organization created to advance technical knowledge in all phases of the building industry.



Wallace R. Persons has been elected president and a director of Emerson Electric Mfg. Co. As president, Persons succeeds W. S. Snead, who was both president and chairman of the board of directors. Snead will continue as board chairman. Persons previously had been associated with Lincoln Electric Co. of Cleveland, Ohio, since 1932. In 1947 he was elected a director of the company and shortly afterwards he became vice president in charge of sales and a member of the company's executive committee.

Joseph Abdo has been appointed chief engineer for all divisions of Drayer-Hanson, Inc. He was promoted from the company's automatic controls division. Prior to joining Drayer-Hanson in 1952, he was with Minneapolis-Honeywell Regulator Co.



R. Wade Willey has been named works manager of Revco Inc., food freezer manufacturer. Willey comes to Revco from a similar position with Clyde Porcelain Steel Div. of Whirlpool Corp., Clyde, O. Willey formerly held key positions with the Grand Rapids division of Nash-Kelvinator Corp. and did research work with Ferro-Enamel of Cleveland. Prior to the merger of Clyde Porcelain with

Whirlpool, Mr. Willey was administrative vice president of the steel firm.

Three sales application engineers have been promoted to key positions by Reliance Electric & Engineering Co. **John Drollinger, Jr.**, manager of the Reliance branch sales office in Toledo for the past two years, has been named manager of the renewal parts and repair division in Cleveland; **William C.**

Mitchell, formerly a sales application engineer in Baltimore, succeeds Drollinger in Toledo; and **Robert O. Gee**, an application engineer in the applied engineering department in Cleveland, has been named manager of service.

Top-level changes in management positions have been announced by Minneapolis-Honeywell Regulator Co. **Harold W. Swentt**, president of the company since 1934 has been

COMPLETE INFORMATION ON
PA[®] 400

Davison's NEW Refrigeration Grade Silica Gel

Free four-page, two-color folder gives complete information on the NEW PA 400 . . . includes moisture adsorption capacity chart, check list, specifications, how to use information, etc.

Write today for your free copy. Remember, buy the best in refrigeration desiccants . . . buy the NEW PA 400!

Progress Through Chemistry

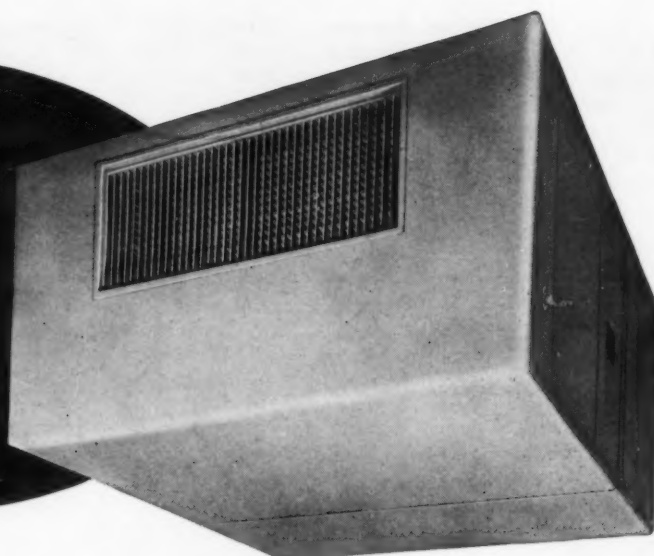
THE DAVISON CHEMICAL CORPORATION

Baltimore 3, Maryland

Producers of: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS AND SILICOFLOURIDES. SOLE PRODUCERS OF DAVCO[®] GRANULATED FERTILIZERS.

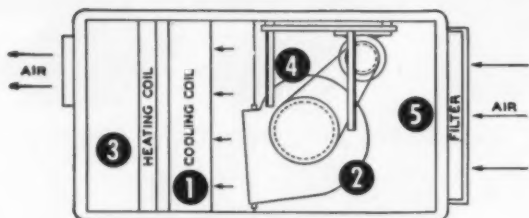
Circle No. 24 on Reader Service Card

NEW FEATURES of PROVEN MERIT



KRAMER

AIR CONDITIONING UNITS



1 MUGGY-AIR-CONTROL

It "squeezes" extra moisture from the air on muggy days without reheating, dampers or excessive cooling. No short cycling and uncomfortable conditions.

2 "BLOW-THROUGH" DESIGN

Fan-motor assembly always exposed to normal room temperatures. A unique design with many advantages, resulting in —
No motor overload and no loss of bearing lubricant from hot air of the heating coils.
No corrosion of fan-scroll assembly from moisture carry-over of the cooling coils.

3 ANTI-SWEAT CONSTRUCTION

Only a small portion of the casing is exposed to cooled air; that section is heavily insulated.

Access doors and grille have scientific anti-sweat designs.

4 QUIET OPERATION

The fans and motor form an integrated assembly independently rubber-mounted to the casing. All moving parts are completely isolated by rubber.

5 FOR FINISHED INTERIORS

Graceful lines with no unsightly belts, motor and guards exposed to view. Finished in hammer gray enamel.

MANY OTHER OUTSTANDING FEATURES.

WRITE FOR BULLETIN AC-238

KRAMER TRENTON CO. • Trenton 5, N.J.

Circle No. 25 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

elected chairman of the board succeeding **Mark C. Honeywell** who has been named honorary chairman. **Paul B. Wishart**, vice president and general manager of the company, has been elected to succeed Sweatt as president, and **Tom McDonald**, vice president in charge of sales and **A. M. Wilson**, vice president in charge of the firm's aeronautical division, have been named directors of the company.

Robert Eckenberg has been promoted by Cory Corp. to the post of territory manager for Kansas, Oklahoma, and western Missouri. In his new position, Eckenberg will handle the sale of all Cory, Nicro and Fresh'd-Aire products to Cory Corp. distributors and dealers in Kansas City and surrounding territories. Prior to his promotion, Eckenberg was the assistant territory manager for Chicago and northern Illinois.

Stephen C. Bixby has been appointed operations manager of Minneapolis-Honeywell Regulator Co.'s new appliance controls division plant at Gardena, Calif. Bixby formerly was chief of mechanical design for the company's heating controls division.

Paul O. Bancroft has been appointed account supervisor for Worthington Corp.'s air conditioning and refrigeration division. He will assume responsibility for all air conditioning and refrigeration advertising and sales promotion. Formerly with the advertising and sales promotion department of General Electric Co., Ban-

croft joined Worthington in 1952 as account supervisor for the merchandising division and supervisor of displays and exhibits.

AIRTEMP APPOINTS K. C. DISTRIBUTOR

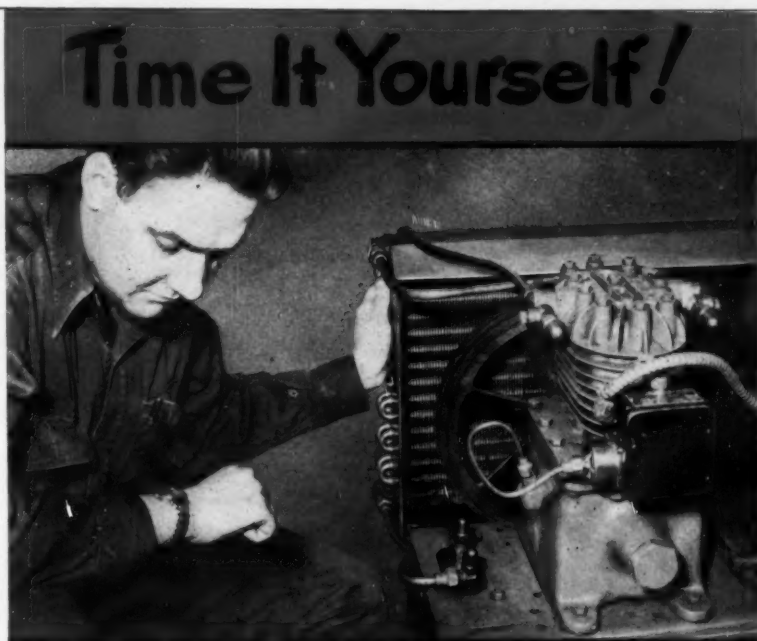
Truog-Nichols Distributing Co. has been appointed wholesale warehouse distributors for Chrysler Airtemp residential air conditioning, heating and packaged air conditioning products in the Kansas City area.

RSES CONFERENCE SET FOR OREGON MARCH 26

The fifth annual educational conference of the Western International Association of Refrigeration Service Engineers will be held in Eugene, Oregon on March 26-7-8.

Highlighting the conference will be top men in the refrigeration industry who will lecture and answer questions from the audience on topics in their fields.

Several social events in connection with the conference have been planned by the Webfoot Chapter of Eugene, the conference host.



How long does your present method take to dry the refrigerant so that the unit will operate without danger of repeat freeze-ups? 30 minutes? 2 hours? 12 hours?

It will surprise you to see how quickly Thawzone will clear up a moisture condition. Just time it! A few minutes are usually enough. 5, 10 or 20 minutes! And when you leave the job you can be pretty confident that you won't get an angry callback just as you get started on the next job.

Thawzone does a more thorough job, due to the way it functions. It is not a mere moisture holder or a mere antifreeze. Thawzone will DESTROY moisture. The moisture it eliminates is gone . . . It cannot come back. And, with

another action, Thawzone neutralizes acids that accelerate the break-down of oil and cause corrosion. Nothing duplicates the moisture eliminating and protective action of Thawzone.

CONSIDER THESE ADVANTAGES:

- A. Drying action not "smothered" by oil.
- B. Cannot cause pressure drop.
- C. Actually destroys moisture.
- D. Helps neutralize the acids formed by constant breakdown of oil.
- E. Costs only about 8 cents per pound of refrigerant treated.
- F. For all "Freon" or methyl units.
- G. Only 1/4 oz. per pound of refrigerant required.

You can get Thawzone in 1 ounce, 4 ounce and pint bottles at your wholesaler. Highside Chemicals Co., Clifton, N. J.



THAWZONE®

The Only Product That Destroys Water . . . and Reaches All of it

Prepare Now

for the Profitable Jobs...

with the expanded line of

Curtis

AIR CONDITIONING AND REFRIGERATION EQUIPMENT

This complete line of CURTIS equipment assures highest possible efficiency, dependability and quality... at a price that is profitable for you.

Not only will you be equipped to handle any installation but you will be selling equipment that is accepted the world over, and that is proven by 100 years of successful manufacturing experience.

To help you sell more CURTIS Air Conditioning and Refrigeration equipment, it is nationally advertised in *Saturday Evening Post*, *Time* and *Newsweek*, plus many other national magazines.

For immediate information on how to make your operation more profitable, mail this coupon for details of how you may secure a direct factory franchise:

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company

1915 Kienlen Avenue, St. Louis 20, Missouri

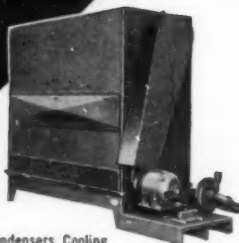
I am interested in direct factory franchise. Send complete details.

Company Name.....

Street.....

City.....Zone.....State.....

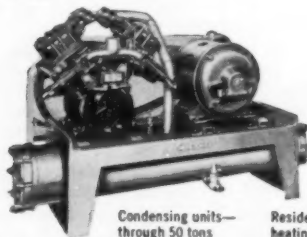
Signed.....



Evaporative Condensers, Cooling Towers and Air Handling units to match



Packaged Air Conditioners—2, 3, 5, 7½, 10 and 15 tons



Condensing units—through 50 tons



Residential cooling and heating units



New 1954 Curtis Room Air Conditioner in three popular sizes.

CURTIS REFRIGERATING MACHINE DIVISION

1915 Kienlen Ave. — St. Louis 20, Mo.

Circle No. 27 on Reader Service Card

NO WAITING . . .

Popular sizes carried in stock!

UNI-BUILT



UNI-BUILT

Designed especially for refrigeration and air conditioning applications

Sizes, capacities and prices on B & G Series 1522 and 1531 Stock Pumps are given in a bulletin available upon request. Send today for your copy.



B & G manufactures a comprehensive line of Hydro-Flo Centrifugal Pumps, Condensers, Evaporators, Heat Exchangers and Liquid Receivers. Send for catalogs.



These are the pumps for your cooling tower or evaporative condenser installations! For your convenience, a stock of most commonly used sizes is maintained at the factory—ready for immediate shipment.

The leak-proof "Remite" Mechanical Seal alone makes these pumps a *buy*! This new-type Seal is harder than glass—wear-proof, corrosion-resistant. It's self-lubricating and eliminates the usual leakage through the packing gland—assures trouble-free operation.

Smooth running . . . quiet!

Oversize bearings hold the shaft in alignment for smooth, quiet performance...balancing of the impeller prevents shaft vibration and seal failure. All parts are machined to rigid specifications, carefully inspected and assembled—assurance of minimum installation and maintenance expense. B & G Series 1522 and 1531 Pumps kept in stock at the factory are bronze-fitted only, but are available as all-iron, all-bronze or stainless steel units.

With all these advantages, you'll find them competitively priced!



Hydro-Flo[®]
REFRIGERATION
EQUIPMENT

BELL & GOSSETT
C O M P A N Y

Dept. DH-45, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto

*Reg. U.S. Pat. Off.

Circle No. 28 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1954

standardize on **Century** MOTORS

for smooth,
quiet performance
that keeps customers happy

Century

MOTORS

SINGLE PHASE:

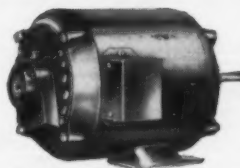
Split Phase Induction— $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, H.P.

Capacitor— $\frac{1}{8}$ to 20 H.P.

Repulsion start, brush lifting,

Induction— $\frac{1}{2}$, to $7\frac{1}{2}$ H.P.

For unit heaters, attic fans, furnace blowers, window fans, room coolers, circulating pumps, compressors.



There's a Wide Range of Types and Sizes For All Your Needs

Century Motors are available in all types of protective frames, such as Splashproof for outdoor installations on cooling towers—and Explosion Proof for use in operating rooms where explosive ether is present.

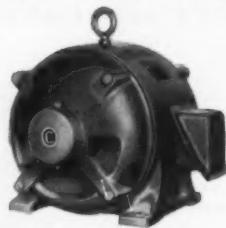
POLYPHASE:

Squirrel Cage Induction— $\frac{1}{8}$ to 400 H.P.

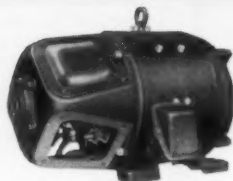
Wound Rotor Motors—1 to 400 H.P.

Synchronous Motors—20 to 150 H.P.

For compressors, fans, blowers, cooling towers, pumps.



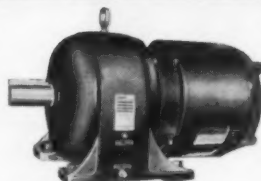
For expert help with your motor problems, consult the Century Branch Office nearest you, or conveniently located Century distributor. A nation-wide network of Century Service Stations is always at your service to give the assistance you need.



DIRECT CURRENT:

$\frac{1}{8}$ to 300 H.P.

For all applications that require direct current.



GEAR MOTORS:

$\frac{1}{8}$ to 15 H.P., single, double and triple gear reduction.

CENTURY ELECTRIC COMPANY

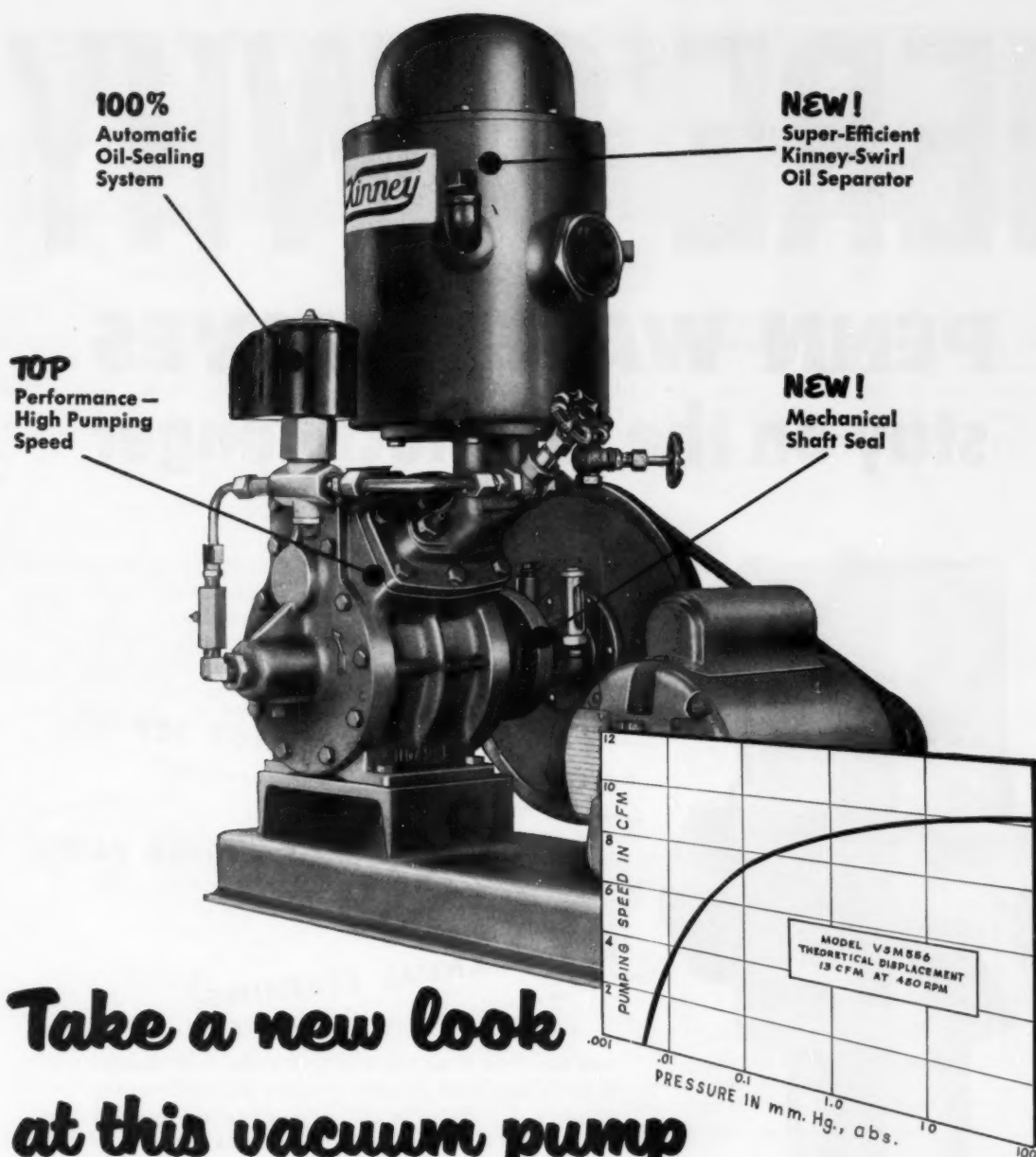
1809 PINE STREET • ST. LOUIS 3, MISSOURI

Offices and Stock Points In Principal Cities

826

Circle No. 29 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION



Take a new look at this vacuum pump

It's Kinney Model VSM 556 . . . 13 cubic feet of free air displacement. Model VSM 556 is now serving in many of the nation's foremost vacuum processing systems. Look at its outstanding features — and at its high pumping speed. Check your own vacuum requirements . . . and then come to Kinney for the most vacuum pump for your money. Send coupon for complete details.

KINNEY MFG. DIVISION THE NEW YORK AIR BRAKE COMPANY

3618 WASHINGTON STREET • BOSTON 30 • MASS.

- ☐ Please send Bulletin V-51B describing the complete line of Kinney Vacuum Pumps.
- ☐ Please have your vacuum engineer call at our plant.

Name

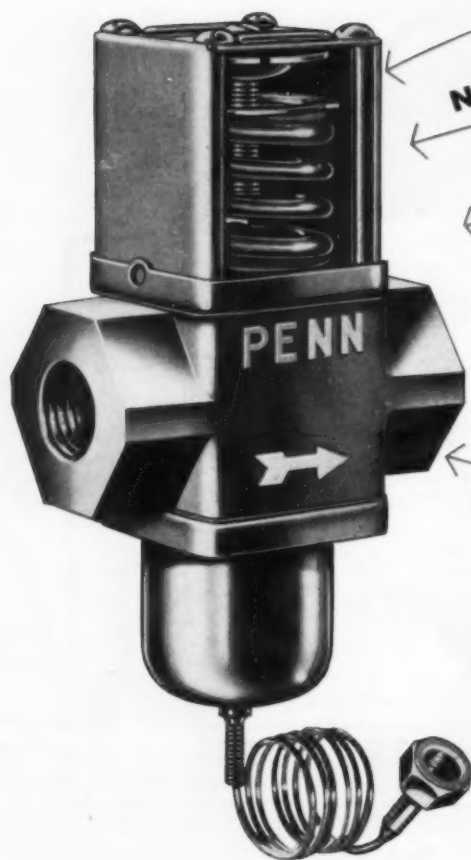
Company

Address

City State

HERE'S WHY

PENN WATER VALVES stay on the job much longer



NO VALVE CHATTER

NO WATER HAMMER

NO RUSTING OF RANGE SPRING

NO CORROSION OF SLIDING PARTS

EASY MANUAL FLUSHING

And the Penn water valve is very sensitive to changes in refrigerant head pressures to assure highest operating efficiency. Try the Series 246 on your next refrigeration job... you'll discover it will *stay on the job* much longer than other water valves.

Sizes from $\frac{3}{8}$ " to $2\frac{1}{2}$ " in flanged and threaded styles... also available for temperature actuated service. Ask your wholesaler or write **Penn Controls, Inc., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ontario.

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES
Circle No. 31 on Reader Service Card



RECESSION-PROOF is the description given to the air conditioning industry by Matthew M. Lawler, vice president of Worthington Corp.'s air conditioning and refrigeration division. Speaking before a group of Worthington air conditioning equipment distributors, Lawler said that in air conditioning the distributors have a strong defense against any business declines. "There are even reasons to argue that a recession would have a positive effect on the sales of air conditioning systems," he stated. "We expect a 40% increase in our total volume of sales in the coming year", he concluded, "with an increase of 60% in the sales of commercial packaged air conditioners alone."

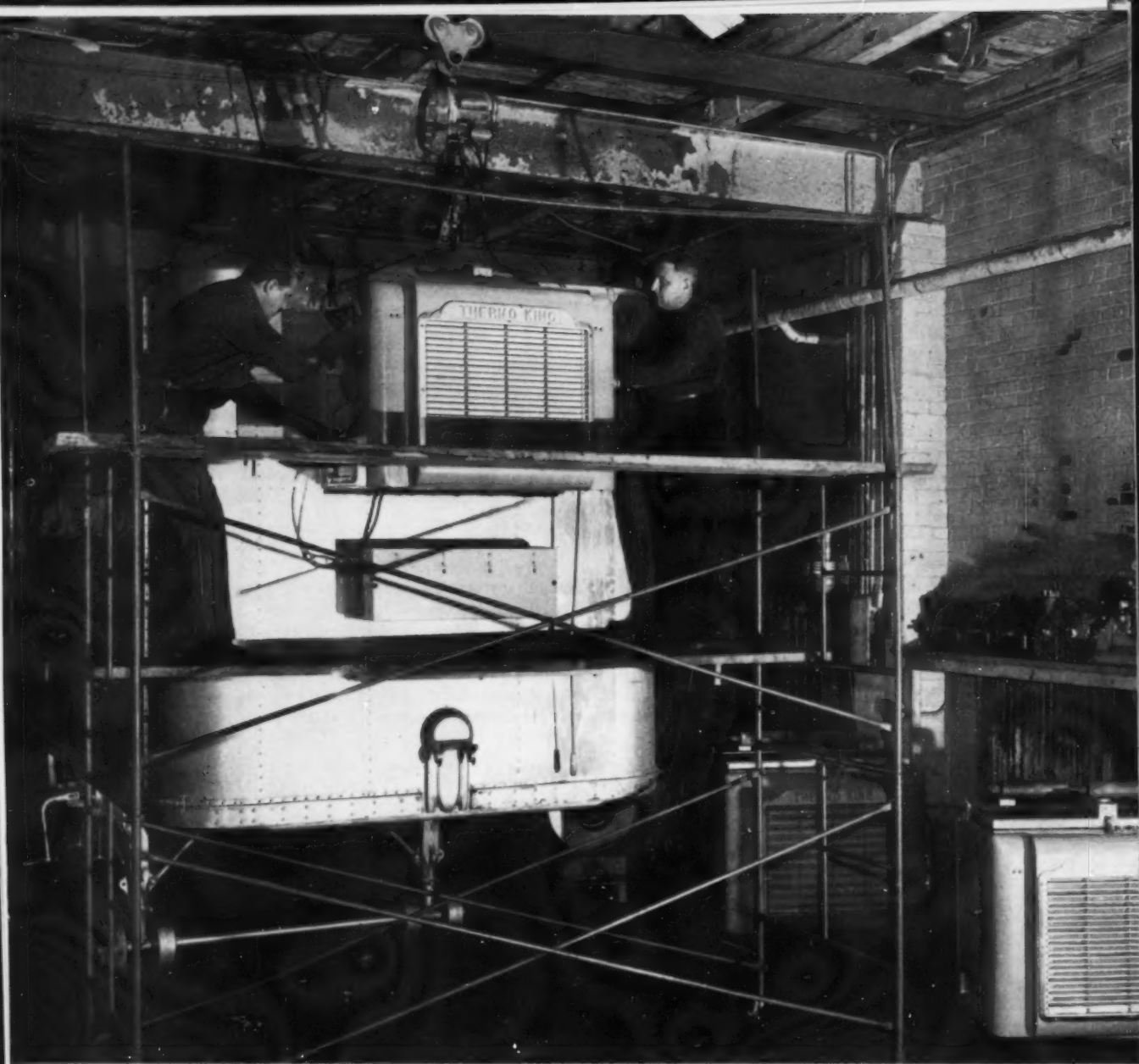
ELECTRONIC AIR CONDITIONING units which might eliminate motors and compressors may appear in the not-too-distant future, suggests David Sarnoff, board chairman of Radio Corp. of America. The development depends on the Peltier effect, first observed in 1834. When an electric current flows through a circuit consisting of similar conductors, heat is absorbed at one junction and dissipated at the other. Research has been carried on for many years to develop an alloy with the greatest heating or cooling effect. The most recently developed alloy develops a thermo-electric potential of 143 microvolts per degree, only 31 short of the estimated requirement for successful operation of a household refrigerator.

GELID GOOBERS have been shown to have superior taste and appearance in tests conducted by the Georgia Experimental Station. During 1950, 496,511,000 lbs. of shelled peanuts were processed in the United States, of which at least 100 million pounds were cold stored. Results of the experiments showed a greater difference between peanuts stored at 70 and 50 F than there was between those stored at 50 and 0 F. The lower the temperature the higher the quality after storage for 7 to 9 months.

AIR CONDITIONER FINISHES were discussed in several sessions of Glidden Co.'s recent three-day management meeting. Among the company's products which tests have proven especially adaptable for use on air conditioners is "Nu-Pon" primer. Extremely resistant to moisture and corrosion, this highly adhesive primer has shown its ability to give complete one-coat protection to damp interiors of home and room coolers. This primer has also been used successfully as the primer on exteriors of air conditioners.

MUSHROOMS NEED REFRIGERATION in shipment and storage and on retail display. Some food merchants may be missing a bet by not putting mushrooms in refrigerated display cases. Tests at the Beltsville (Md.) Agricultural Research Center show that freshly picked mushrooms stay in perfect condition for only one day or less at 60 to 70 F, but will keep for one to two days at 40 F, or four to five days at 32 F. They can be stored for three to four days at 32 F, or for two days at 40 F, and still remain in good selling condition for one day, if displayed in refrigerated cases at 50 F.

USE OF HOLLOW STEEL BEAMS and girders to do double duty as air conditioning and heating ducts was explained in a recent issue of *Architectural Forum*. The building described is a two-story office structure. Similar welded hollow beams and columns have previously been used successfully in a seven-story building in Athens, Ga. Difference is that fire-proofing is not required in the two-story building, the steel being merely painted, thus lowering the installation cost.



OPPORTUNITY KNOCKS . . .

**in the truck refrigeration field for
contractors willing to specialize.
Here's the story of one who did it.**

AMPLE SPACE AND SPECIAL EQUIPMENT such as the overhead hoist and two-stage portable scaffold are the primary needs of a refrigeration contractor desiring to specialize in the installation and maintenance of truck refrigeration equipment. Here "Chuck" Heemstra (right) and Howard "Mac" McDonough replace a unit which has just been repaired in their shop.

THERE'S a steadily expanding future for refrigeration contractors in the field of truck refrigeration.

Recognizing this fact, Charles M. Heemstra, president of Commercial Refrigeration Service, Inc., Detroit, Mich., has converted his firm into an organization specifically adapted to the sale, installation, and maintenance of transport refrigeration equipment.

Heemstra had one big advantage working for him right from the start. He knew the trucking business from A to Z, having spent some 13 years as a driver with Henry Vroom & Son, the contract carrier for a large chain food store organi-

zation. He knew the trucker's problems. He talked the trucker's language.

Coupled with this he had a solid background of commercial refrigeration service experience gained from a combination of trade school training, wartime service in a Navy ship repair unit, and practical experience both before and after the war with the service department of one of Detroit's largest commercial refrigeration dealer and contractor organizations.

He served as service manager of this organization until the company was dissolved, at which time he organized his own firm under the name of Commercial Installation &

Service Co. to handle general commercial refrigeration service in the Detroit area.

It was during this period that Henry Vroom, Heemstra's former employer, was looking for some information on mechanical refrigerating units for trucks. He came to Heemstra to find the answers. But Heemstra didn't know either, so he sat down and wrote a letter to every manufacturer he thought might be producing this equipment.

He wrote 13 letters in all, but returns from this mailing indicated that only two of these concerns were actively producing truck refrigeration units at that time which were adaptable for this use. These two



GASOLINE ENGINE REPAIR is a most important phase of the truck refrigeration business, as nearly two-thirds of all service troubles stem from this source. Here Clarence Rodocker, a gas engine expert, goes to work on a faulty unit.



INVENTORY PROBLEMS are tackled by Heemstra himself, as he stands in the company's stock room while checking on a rush order shipment. The many special parts required for truck units make an extensive and costly inventory necessary.

Something New in Service...

**A REFRIGERATION
SERVICE TO MEET
YOUR REQUIREMENTS**

Repair Service For Your

HAVE YOU

Tried Our REFRIGERATION REPAIR SERVICE

**For Your
Refrigerated MOBILE Units?**

COMPLETE

Service on ALL makes
of refrigeration equipment

THOROUGH

Factory trained mechanics

SERVICE

that will eliminate costly
equipment tie-up through
the use of exchange units.

REFRIGERATION REPAIR SERVICE

**For Your
Refrigerated MOBILE Units**

**TRU-KOOLER
ARCTIC TRAVELER
THERMO KING**

COMMERCIAL REFRIGERATION SERVICE, INC.

M. T. A. MEMBER

5400 Main Ave.
Detroit, Mich.

Phone
TY 4-4750

firms were U.S. Thermo Control Co. ("Thermo King") and American Mfg. Co., Inc. ("Arctic Traveler").

It was at this stage of the game that Heemstra decided, on the basis of his previous trucking experience and the Vroom firm's intensified interest in truck refrigeration that there might be some real possibilities in this field for a refrigeration contractor who was willing to take the initiative and go after this business.

Sparked by this determination, he made arrangements to become a franchised service dealer for the Arctic Traveler line. As an indication of how wide open this field was at that time, Heemstra's was the first refrigeration firm to align itself with the Arctic Traveler organization. All of that company's previous distribution had been through truck and trailer outlets, body shops, and similar types of firms.

Encouraged by his initial successes in this venture, Heemstra became convinced that here was a field in which he could carve himself a promising future. Gradually he began to take the necessary steps to tailor his organization to the kind of operation which could successfully specialize in selling, installing, and maintaining truck refrigeration equipment.

In 1951 he made contact with Talbert-Thomas Co. in Chicago, distributor for Tru-Kooler, Inc., and

thus became a franchised service dealer for the "Tru-Kooler" line. Early in 1953 he further broadened his coverage by obtaining a Thermo King franchise, and even more recently he took on the "Coldmobile" line manufactured by the Dromgold & Glenn Division, of Union Asbestos & Rubber Co.

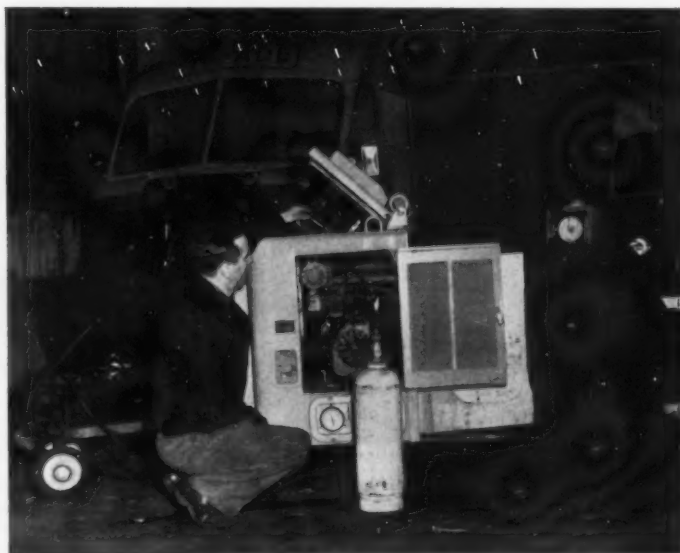
All this time, Heemstra was feeling his way in this new field. He continued to handle all of his regular commercial refrigeration service work while the volume of his truck refrigeration business began to build up. As more and more highway rigs began to pull into Heemstra's place to have refrigerating units installed or repaired, however, it became apparent that the company's quarters and facilities were not adequate to handle this specialized—and profitable—type of business.

Heemstra soon came to realize that he had to make a basic decision as to the future course of his business. By this time, he was completely sold on the potential which lay in the field of transport refrigeration, so in January, 1953, he moved his company's operations to a larger and more suitable location, and really began to go "all out" on truck refrigeration work.

This meant, of course, that it was necessary for him to curtail his regular commercial activities. So he began to ease out of the straight commercial work, accepting no new

ADVERTISEMENTS like those above are placed in the monthly journals of two state trucking associations to attract new business. Note that these ads stress the fact that the service firm actually is a member of the trucking association involved.

TESTING of repaired truck units is done before they are replaced. A large canvas bag is fastened over the end of the unit from which refrigerated air is delivered. This simulates the interior of the truck body, and makes possible accurate instrumentation. Joseph Dupuis checks the gages for this test run.



business but keeping a few major accounts, both as a matter of good customer relations and as a "cushion" to fill in whatever slow spots there might be in the truck refrigeration business.

But as things stand now, Heemstra is sure that the time is not far off when his firm will be engaged 100% in the business of providing and maintaining refrigeration equipment for the steadily growing fleets of controlled-temperature truck units which roll along the city's streets and the nation's highways.

What are the requirements for a contractor desiring to specialize in this field? What kind of facilities must he have? What type of employees must he hire? What special types of equipment are necessary? What special forms should he use? How can he promote his business? The answers to all of these questions are to be found in Heemstra's operation.

Take the matter of shop location and facilities, for instance. Ideally, the shop should be located somewhere in the general area of a trucking terminal, where most of these refrigerated trucks will be stopping anyway. This eliminates the need for any long out-of-the way runs for the truckers in order to obtain the refrigeration repairs they may need.

Ample parking facilities should be available, for these highway trailer units take up a lot of room,

and if three or four happen to pull in simultaneously, the contractor must have some place to put them.

The shop itself should have garage facilities large enough to accommodate at least one (and preferably more) trailer unit, so that even the largest highway rig can be driven right into the shop while the refrigerating unit is being removed or replaced. Heemstra recommends a minimum of 3000 sq. ft. of area in the shop, with at least a 16-ft. overhead clearance.

A few items of special equipment are needed, such as a portable two-level scaffold and a chain hoist to aid in removing and installing the refrigeration units. Heemstra's shop is equipped with a 1-ton chain-fall with a 25% overload factor.

Another piece of equipment virtually essential to this type of operation is a steam cleaning set-up to facilitate removal of all road dirt from the refrigeration units before servicing them. This not only makes the units easier to service, but also minimizes the possibility of foreign matter getting into the system. A portable battery charger is another "must" piece of equipment.

The only special business form which Heemstra has found necessary is a modified automotive service form which is made out in quadruplicate.

The original (white copy) of this

form becomes the firm's office copy and is filed by job number in numerical sequence for ledger posting. The second copy (yellow) goes to the truck driver as his record. The third copy (blue) is sent to the trucking firm for its office records, or given to the driver if he is an independent hauler. The fourth copy (printed on card stock) is used for shop and service records, and is filed by make and serial number of the refrigerating unit.

From the standpoint of personnel, Heemstra has found that the most important thing is to have one mechanic who is an expert on gasoline engines. This is necessary because approximately two-thirds of all service difficulties, according to Heemstra, involve some sort of gasoline engine repair. These troubles are due largely, he is convinced, to lack of proper maintenance of these units on the road.

Heemstra also feels that it is extremely important for every mechanic to know as much as possible about every type of truck refrigeration unit he handles. For this reason he makes it a point to send at least one of his five men to service schools operated by the manufacturers every time the opportunity presents itself.

Another important factor in this kind of a business, Heemstra declares, is the maintenance of "loaner" units of each type of equipment handled. Heemstra has three such units which are equipped with engine-hour meters and are rented to truckers at a rate of 50 cents per running hour, with the user liable for any loss or damage due to accident or negligence.

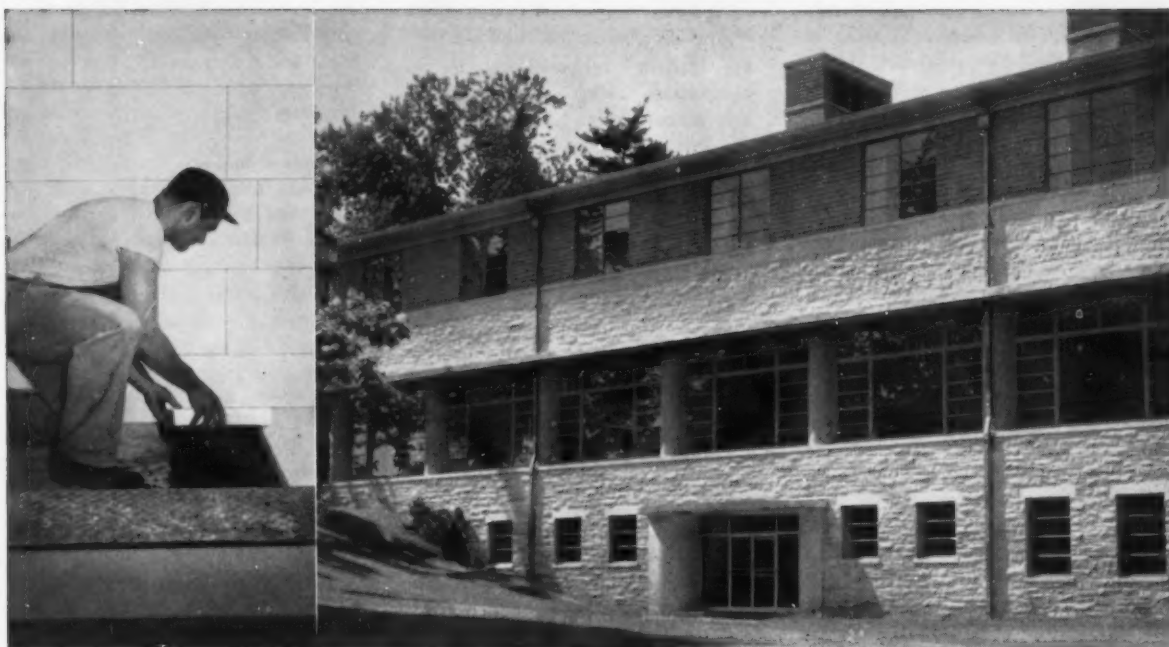
This set-up makes it possible for a trucker with a defective refrigera-

Continued on page 59

Commercial Refrigeration Service, Inc.				
3440 NICLA • Phone TYler 4-6725 • DETROIT 8, MICH.				
DATE				
NAME				
ADDRESS				
CITY				
STATE				
CUSTOMER ORDER NO.				
TRAILER NO.				
DEL. TICKET NO.				
MODEL				
ENGINE NO.				
COMPRESSOR NO.				
IN				
OUT				
REPAIR ORDER INSTRUCTIONS				
I HEREBY AUTHORIZE REPAIR WORK TO BE DONE AT THIS SHOP AND REQUEST THAT YOU HOLD ME HARMLESS FROM ANY LOSS OR DAMAGE TO MY PROPERTY OR TO MYSELF OR TO OTHERS BY ANY REASON.				
DATE				
BY				
TOTAL LABOR				
TOTAL PARTS				
FED. TAX				
TOTAL				

PRINT CLEARLY — BE SPECIFIC — SHOW ALL SERIAL NUMBERS — BE ACCURATE

PAPER WORK is simplified through the use of a modified automotive service form such as this. It is filled out in quadruplicate, so that accurate records of the transaction may be had by all parties concerned.



Contractor: Eastern Cold Storage Insulation Corp. Architect: Eggers and Higgins, New York

MANHATTANVILLE COLLEGE USES STYROFOAM IN EIGHT COLD ROOMS

This rigid low-temperature board insulation provides
low "K" factor, excellent water resistance, long service life

THE DOW CHEMICAL COMPANY
Plastics Sales, PL 650B, Midland, Michigan.

Please send me your booklet containing information on
Styrofoam low-temperature insulation material.

Name _____

Title _____

Company _____

Address _____

City _____ State _____

The insulation problem at Manhattanville College of the Sacred Heart, Purchase, New York, involved five cold rooms immediately off a hot kitchen area and also one freezer room and three cold storage rooms. Styrofoam® was used for walls, ceilings and floors. It was found that Styrofoam rigid low-temperature board insulation combined *all* these desired factors:

- Low "K" Factor • Odorless
- High Thermal Resistance • Resistant to Rot and Mold
- Water Resistance • Light Weight • Long Insulation Life
- Easy to Install • Low-Cost Installation • Maintenance, Operation • Wide Range of Sizes

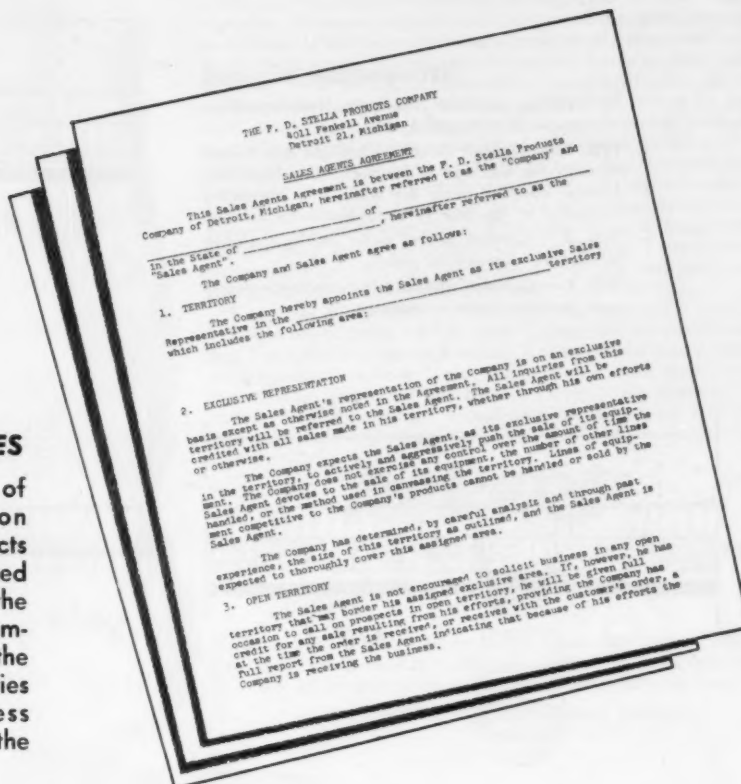
If you are investigating insulation for low-temperature rooms, insulated vehicles, refrigeration equipment, pipe covering or perimeter insulation, contact your Dow sales office for the name of your nearest distributor. Or write THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on **DOW PLASTICS**



MORE TIME FOR SALES

is needed by top executives of every commercial refrigeration dealership. F. D. Stella Products Co., Detroit, Mich., has helped free its key personnel from the shackles of office routine by streamlining its paper work through the application of an integrated series of "custom tailored" business forms. Here's one step in the process.



Tie Sales Agents to a Contract

MOST commercial refrigerator dealers employ two types of sales personnel: (1) salaried salesmen and (2) sales agents who operate on a straight commission basis.

Technically and legally speaking, the latter are "Free agents", but in actual practice they are tied as closely to the dealer's products and policies as are the salaried salesmen. Because of the peculiar status of these sales agents, however, it is important for the dealer to have a definite contractual arrangement with them.

Whenever a new sales agent is appointed, a contract is drawn up at once, primarily to outline the scope of duties, the territories, and the manner in which remuneration will be paid.

This contract between the company and the sales agent precludes misunderstandings in the future and serves as a guide post to all transactions that may arise. Moreover, for federal tax purposes, it sets aside the requirement for the withholding of income and social security taxes, provided a general consent by the Bureau of Internal Revenue has been obtained for the particular company in question.

Some of the pertinent points found in the contract are as follows:

(a) The sales agent is not encouraged to solicit business in any open territory that may border an assigned exclusive area.

(b) The sales agent is not permitted to appoint a sub-agent.

(c) Compensation is in the form of commission paid on orders and is not considered final until the invoice is paid.

(d) The sales agent is entitled to and will receive monthly accounting of his earnings.

(e) Use of the company name and obligations incurred in the name of the company are specifically outlined and restricted.

(f) The right to charge back underpaid accounts or repossessions is reserved by the company.

(g) The company is not liable and will not provide any of the sales agent's operating expenses.

(h) The agreement is for one year only and may be cancelled by either party by written notice 15 days in advance of termination date.

This agreement has stood the test of time and court, and its use is highly recommended.

RECOMMENDED METHODS

of installing electrical wiring in low-temperature rooms are diagrammed here:

FIG. 1 — Conduit should be brought into freezer through the wall and under the ceiling insulation. Special conduit seals out warm air, preventing formation of ice due to condensation in conduit.

FIG. 2 — Conduit carried under ceiling insulation is simplest, cheapest to install.

FIG. 3 — Conduit imbedded in insulation increases cost, improves room appearance.

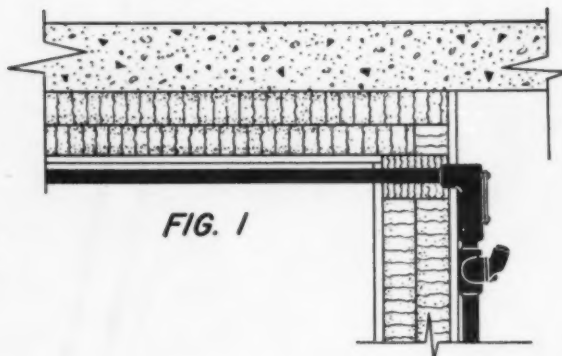


FIG. 1

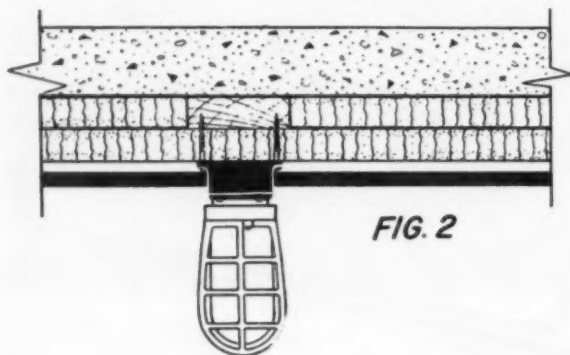


FIG. 2

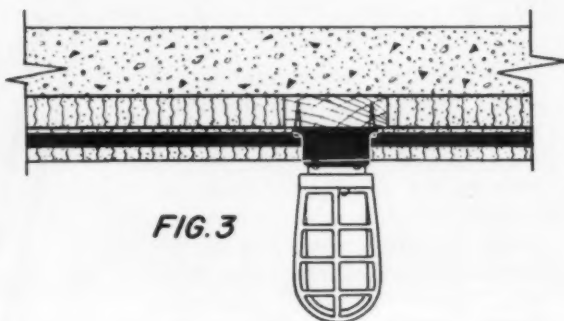


FIG. 3

PLAN THE WIRING when you plan the freezer

ELECTRICAL wiring is usually considered a relatively small detail in the construction plans for a freezer room. For this reason, lights and fixtures are all too often an afterthought — a last minute detail. The resulting wiring then becomes, of necessity, a hurry-up job of installation, requiring considerable ingenuity on the part of the electrician.

Too many times, when the electrician arrives on the job, everything is complete except for the final insulation finish, and sometimes that is already applied. Plans have made no provision for the wiring. Faced with this problem, the electrician can do nothing but wire the room from the outside, dropping

outlets through the ceiling at those points where lights are required in the freezer.

This practice violates a cardinal principle of insulated room construction; that is, the insulation envelope should be pierced or broken only at a minimum number of places. Metal conduits leading into a freezer room are good conductors of warm air and heat, and each conduit thus reduces the efficiency of the job.

Here's how this happens. The moisture in the warm air flowing into the room through the break made by the conduit will condense, turning to ice in the surrounding insulation and on the outer surfaces of electrical fixtures. The moisture

in the warm air in the conduit itself will do the same thing, forming more ice inside the conduit and fixtures and on light globes.

Over a period of time, all this condensation and freezing is bound to have damaging effects on both the insulation and the electrical work.

By a little simple planning before the insulation is erected, the damaging consequences of freezing in and around conduits and fixtures can be avoided.

Best recommended practice is to bring the electrical wiring into the freezer through a conduit piercing the wall insulation just underneath the ceiling insulation of the freezer

Continued on page 57

ANOTHER CASE OF

Copper

WHERE IT COUNTS

4,800 FEET OF TYPE "L"
REVERE COPPER WATER TUBE,
IN SIZES FROM 1" TO 6"
USED IN AIR
CONDITIONING SYSTEM OF
U. S. Fidelity and
Guaranty Company Bldg.
Baltimore, Md.

Take a good look at the two photographs below. Then visualize this same installation made with threaded fittings and think of the time that would have been consumed running these lines. No wonder more and more copper tube is being used for air conditioning, water and waste lines.

You don't have to worry about wrench room in the tight corners, solder joints are made much faster, present a much cleaner appearance. And you need never worry about replacing copper tube due to rust, for copper can't rust. There is no loss of flow or pressure, no allowance in pipe size need be made for rust accumulation with Revere Copper Water Tube. There are fewer fittings, too, on the long runs, as Revere Copper Water Tube comes in straight lengths of 20' in hard and soft tempers and 60' coils in soft temper. It's easy to bend, too.

Keep out of trouble, protect your reputation for quality work, with copper. Use Revere Copper for air conditioning lines, radiant panel heating, hot and cold water lines, underground service lines, waste stack and vent lines, processing lines. See the Revere Distributor nearest you today. And, if you have a technical problem, he will put you in touch with Revere's Technical Advisory Service.

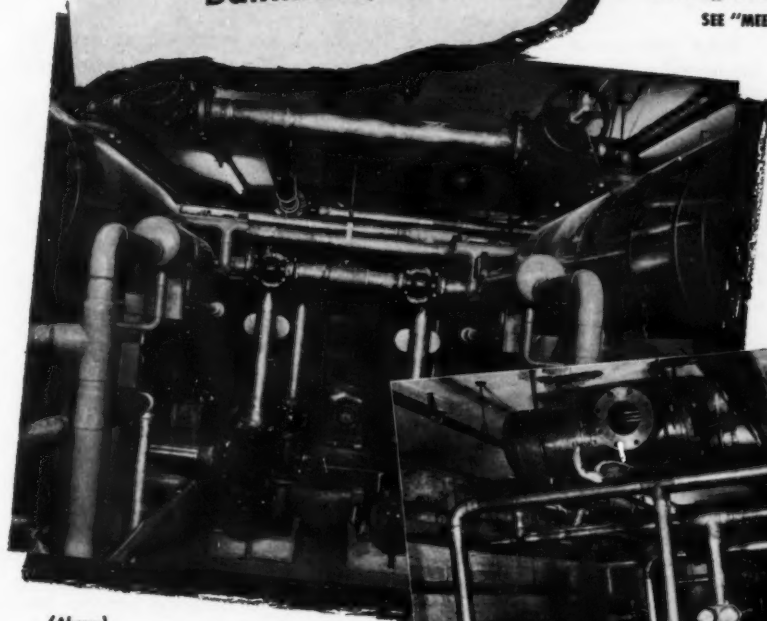
REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.;
Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

SEE "MEET THE PRESS" ON NBC TELEVISION, SUNDAYS

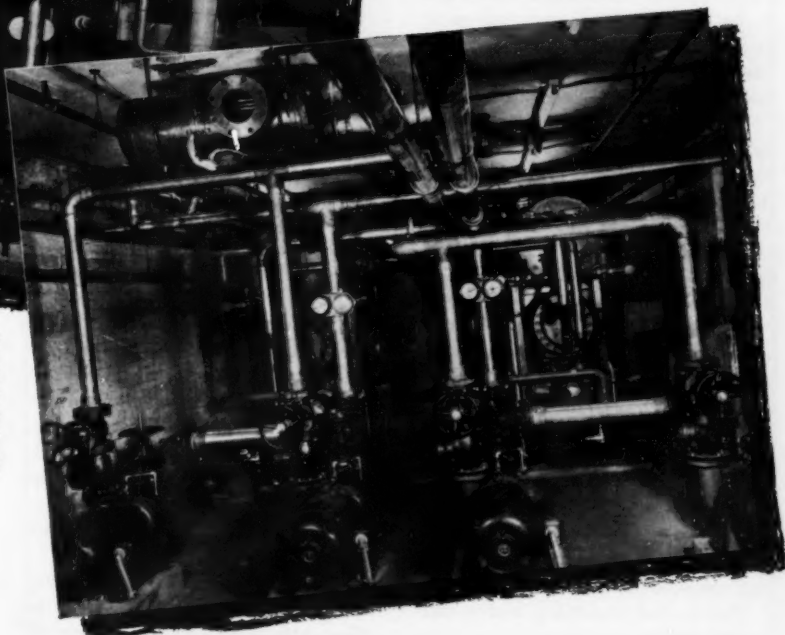


(Above)

REAR VIEW of system which air conditions the entire building of 9 floors, and has a capacity of 150 tons. Cooling tower is located on roof. System was completely installed by H. E. CROOK COMPANY, INC., Plumbing, Heating, Electrical and Air Conditioning Contractor. Tube was supplied by Revere Dist., J. T. ROBERTS & BROTHER, INC., both of Baltimore.

(Below)

FRONT VIEW of air conditioning system showing the neat-appearing, non-rusting Revere Copper Water Tube. Photo shows system before it was put into operation and before cold water lines were insulated.



What does your profit and loss statement look like?

TABLE 1

Sales	\$50,000
Cost of sales—labor-materials	30,000
Margin on sales	\$20,000
Overhead expense	15,000—30%
Net profit on sales	\$ 5,000—10%

TABLE 2

Sales	\$50,000
Cost of sales—labor-materials	30,000
Margin on sales	\$20,000
Overhead expense—including \$3,000 compensation for the owner's personal services	18,000—35%
Net profit on sales	\$ 2,000—4%

Is the Boss on the Payroll?

MANY members of the refrigeration industry assume that because they own the business and pocket the ultimate profits it makes no difference whether or not they appear on the payroll.

What does it matter, they reason, whether they include a reasonable salary under overhead expense for their services, or dip into the till for what they want when they want it, or draw a check and charge it up to the boss in order to keep the bank account in balance with the books.

The gist of their thinking on this subject is typified by a remark made by the owner of one typical service business. "What's the difference if I charge expenses with a salary for my services or omit the charge and let the money swell the net profit?" he asked.

He went on to explain that he drew \$3000 compensation a year, and that if he included this sum under overhead he would have \$3000 more expense and \$3000 less profit. If he didn't include it, he pointed out, he would have that much less expense and that much more profit, and so, he'd bank the same amount during the year and end up with the same bank balance.

This is bad reasoning and it can cause trouble.

Take Serviceman Smith, whose condensed profit and loss statement shows the figures which appear in Table 1.

These ratios are not necessarily those of any serviceman or group of servicemen in this industry. They are merely illustrative. The ratios will differ with the size of the territory, the volume sold, managerial effectiveness, and other factors.

Creates False Impression

But let's get back to Serviceman Smith. Suppose he has recorded no salary under overhead expense for his own services, preferring to "let it ride" and swell the net profit. Unless he makes mental note of this fact when analyzing the profit and loss statement (and most servicemen do not), he will get the impression that his overhead expense runs 30% of sales.

This may be a reasonable ratio for servicemen doing similar volume and with a similar business set-up, but these servicemen may be including compensation for their managerial efforts in the overhead figure. Hence, Serviceman Smith's burden is higher than average.

Not realizing this, he is complacent and does not take steps to effect better cost control. "I'm all

right on my overhead expense", he muses. "It's no higher than other servicemen in my trade group".

But he would think differently if he put himself on the payroll for \$3000 a year, or whatever was reasonable compensation for his services. Then his condensed profit and loss statement would set up as shown in Table 2.

Smith's overhead is too high for the net profit he earns. True, he has no more money at the end of the year, but he is not earning a satisfactory profit on sales. He must earn more margin by cutting the cost of sales, by increasing selling prices, or decreasing expenses.

For this reason, it is imperative that all servicemen and other members of this industry operating their own businesses include a reasonable salary for managerial services under overhead expense.

In more than one case, it has been found that when compensation for services has been deducted in this way that the business was in the red. The owner would have been better off working for someone else and drawing a salary, without the headaches attendant to business administration in these hectic times.

Moreover, when servicemen use job costing forms, they may be en-

snared into cutting prices if they do not include compensation for their services under overhead expense.

In costing the work after its completion, they use the overhead ratio to sales or labor-hour costing method to arrive at the actual cost per job. If a serviceman figures 30% overhead expense, as shown on Table 1, instead of 36%, as shown on Table 2, he will get cost figures on paper that are below actual cost. This may induce him to feel that he has ample leeway to price-cut and coax business away from competition or, in times of slow sales, to use the price cut as a business stimulant.

Keep Close Tab on Costs

The serviceman, dealer, or contractor, should use the profit and loss statement and job costing records coordinately in order to maintain maximum profit. The cost records are kept to police operations so that actual costs are kept in line with estimated costs and the profitable ratios shown on the profit and loss statement. Any variance should be carefully checked.

Some servicemen take drawing accounts and vary them from period to period. This is bad for business analysis, because in a period when a serviceman's drawings have been heavy, profits will be low on the profit and loss statement; in a period when drawings have been light, profits will be high, yet managerial efficiency may have been less effective in the latter period.

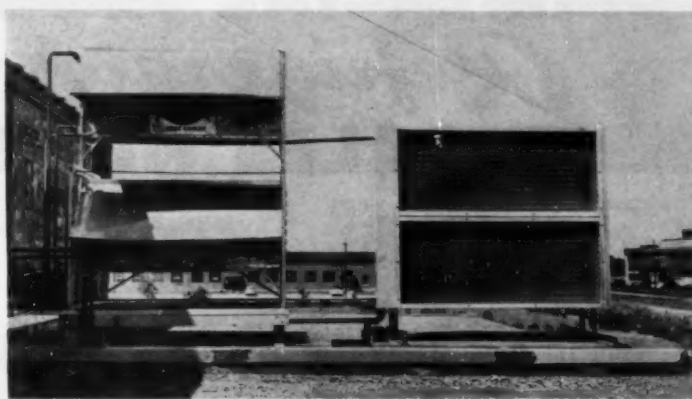
Show True Net Profit

To make business analysis dependable, the components that affect it should be equalized as much as possible.

In some instances, drawings by servicemen are not included in overhead expense, but are held as a debit account until the end of the year. Then they are charged to net worth. This in no way negates the statements made in the foregoing.

To determine true net profit, the drawings should be charged to business expenses regardless of how they are recorded on the books,

Continued on page 57



COST SAVERS for the produce warehouse of Benner Tea Co. are the air-cooled condensing units installed to replace the original water-cooled equipment. All were mounted on the warehouse roof, but only two of the five units are shown here.

Condensing Costs Cut By Equipment Conversion

SOLUTION of a major condensing problem at the main warehouse of Benner Tea Co. in Burlington, Iowa, was accomplished by changing over the original water-cooled condensing unit arrangement to a system utilizing remotely installed air-cooled condensers, according to Eugene Anderson, chief refrigeration mechanic for this company.

The original installation of condensing units using city water was soon found to be creating an intolerably high water bill. In order to reduce this operating cost, the company decided to drill a well to supply their own water for the five refrigerating compressors, totaling 43 hp, which handle the company's produce coolers.

Use of the well required the installation of a 25-hp well pump, plus a 1½-hp pump on the auxiliary storage tank. Thus, operation of the 3-hp compressor used for cooling the banana storage room, for instance, necessitated the operation of motors totaling 26½ hp just to furnish condenser water.

Although the electric cost of this system was less expensive than using the city water supply, it still was excessive. The use of well water also increased the general maintenance costs. Since the water had a high mineral content, it was necessary to dismantle, clean, and adjust the water valves and clean the condensers every two or three months.

In an effort to reduce the amount of money being spent for refrigeration, Benner officials decided to convert the system to air-cooled condensers. Each of the five compressors, ranging in size from 3 to 15 hp, was connected to an independent Kramer "Unicon" mounted on the roof without any structural changes to the building. The installation was made by Pioneer Supply Co. of Burlington.

Operation of the warehouse refrigeration system under this new set-up has been completely satisfactory, Anderson reports. Not only have the air-cooled condensers, by virtue of being properly sized for each individual compressor, lowered operating costs substantially, but they also have reduced maintenance costs of the entire refrigerating system.

COMMERCIAL *Refrigerator* SALES NEWS

Bright Future for Fixture Field Seen by Shell as He Recalls Past

A condensation of an address presented by I. W. Shell, retiring president of National Commercial Refrigerator Sales Association, at that group's 7th annual convention.

FOOD retailing has been, is today, and will be in the future, one of America's giant industries. May it only be a roadstand, a neighborhood "papa and mama" store, or a colossal super market adjacent to a thousand car parking lot, it's all part of the food retailing industry.

The successes and failures of the food retailing industry have a direct bearing on the successes and failures in our own field, the refrigeration, air conditioning, and store fixture business.

We had a humble beginning, and going back only to 1920, some of the "old timers" will recall that the demand for refrigerated display cases was minor, and it took high-powered salesmen to create the desire, plus a long term finance plan to consummate a sale.

Only a few exclusive stores were likely prospects. All others didn't count. Why? Because retail stores in general were still of the "cracker barrel" variety, and the public at large was content to shop in dirty, smelly, unsanitary establishments, as long as liberal credit was extended.

In those days, a man who had a healthy wife would rent a store, go to the market for a load of fruit, vegetables, and groceries. From these very crates and boxes, he would, with the help of his friends and neighbors, fabricate a vegetable

stand, counter, and shelves—and he was in business. It took a long time to convince that man that he needed better equipment to do a better job!

Our dealers, distributors, and manufacturers of refrigerated enclosures believed in the future, and forged ahead, but many of them couldn't survive and failed. Others kept fighting, and from 1928 to



1935 the industry enjoyed an average volume of \$18 million per year, an all time high, climbing slowly from a \$10 million volume in 1927.

Today, this volume has risen to more than \$71 million a year, and this figure is rising steadily.

Of what has this steadily increasing volume been comprised? Here is some indication. In 1952, for instance there was produced 3,002 top display cases, which accounted for 2.8% of the total industry volume. On the other hand, open type meat cases accounted for 14.2% of the total industry volume. Open type display cases for frozen foods graduated from a ratio of 13.9% in 1949 to 17.4% in 1952,

and when the figures are in for 1953, the ratio or differential will be even greater.

What about the future? It is bright and full of promise.

Large food retailers are bound to build bigger and better stores, and small retailers will successfully compete by installing better equipment, renovating, remodeling, and using modern color schemes to attract customers. Many of them already have joined cooperative buying associations, which helps them to compete.

Now the shopper or consumer is on our side, too. She has been conditioned to practically demand an up-to-date, modern store in which to shop.

The food retailer, too, today is of a better caliber. He knows that to exist, he must be competitive price-wise, render good service, and have an outstanding store. Our services are now in greater demand by more retailers than ever before. Instead of the select few, every retail food store is a potential prospect.

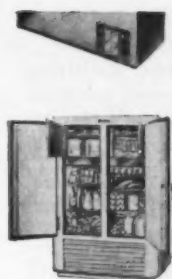
A recent survey made by one large voluntary group showed that 67% of their stores will buy one fixture or do a complete remodeling job in 1954. Progress is in the air! Manufacturers are eager to cooperate with us. The field is "wide open". The hunting season is all year around. Let us set a pace for 1954 and go forward to greater heights in volume and profits.

PARIS TRIP TOPS PRIZES IN ICEMAKER CONTEST

The second annual Carrier Ice-maker Sweepstakes, with a grand prize of an all-expenses-paid trip to Paris, France, for the winning retail salesman and his wife, has been announced by Carrier Corp.

In addition to the grand prize, four awards of \$500 each, one in each Carrier region, 27 other bonus awards, and merchandise points for every sale during the contest will be offered. Distributor salesmen will also receive points for each unit sold by their dealer contestants at the retail level, and distributor sales managers will be awarded four regional bonuses for the top contestants in the qualifying round.

Describing the Sweepstakes which opens on February 15, completes its



14/6
TU-TEMP REF.



CF30 DELUXE
UPRIGHT FREEZER



SC30
REACH-IN



5' FLAT TOP
COOLER



S4 1/2 WALL CASE



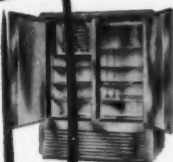
M17
FROZEN
FOOD MERCH.



SC560 REACH-IN



MODEL S40
BOTTLE COOLER



AV75
ANGLE-VUE
FREEZER



BE A BONUS DEALER!

**OVER
\$20,000 BONUS
TO DEALERS
IN 60 DAYS ALONE!**

(Nov. and Dec., 1953)
Write, wire or phone JORDON
to get your share!

Enjoy
BIGGER PROFITS
with the
JORDON LINE

The Complete
Quality Line
at Competitive Prices!

JORDON
Products for the
Home include
• Upright Freezers
• Refrigerator-
Freezers
• Chest Freezers
• Air Conditioners
• Dehumidifiers

If it's JORDON, it's RELIABLE REFRIGERATION!

COMING SOON!
THANKS TO
JORDON DEALERS!
THE NEWEST,
MOST MODERN
FACTORY BUILDING
IN THE INDUSTRY!

JORDON
REFRIGERATOR CO.

58th & Grays Avenue
Philadelphia 43, Pa.

qualifying round on April 10, and ends on May 8, Michael J. Kane, Carrier Icemaker sales manager, predicted that there would be nearly a thousand retail salesmen entering.

All entries must be submitted to Carrier through the distributor in the territory by February 13 to qualify for the Sweepstakes, Kane said. Any dealer salesman can enter without cost or obligation to himself or the dealer firm he represents by getting in touch with the nearest Carrier distributor.

Beginning February 15, the quali-

fying rounds will consist of a series of four two-week sprints in which 16 bonus awards will be made. In addition to 3,000 merchandise points (about \$21 retail value) for each Icemaker sold, the contestant selling the greatest number of units in each of the four Carrier regions during each of the sprints will receive the following bonuses:

First sprint — 25,000 merchandise points; second sprint — \$125 paid against the expenses of a vacation or week-end trip; third sprint — 25,000 merchandise points;

fourth sprint — \$125 vacation or week-end expense money.

At the end of these qualifying sprints, the overall retail salesman winner in each of Carrier's 11 sales districts will be awarded 40,000 merchandise points. Top salesman in each of four regions will receive \$500.

The top 25 salesmen in each region at the end of the sprints will qualify for the final three weeks' Sweepstakes for the Paris prize trip. Ties will be included among qualifiers. Only those Icemakers sold during this final period will count toward the grand prize. All sales will continue to receive 3,000 merchandise points.

For Recognized Quality - Extra Gallons

Sell Your Condensing Unit

Filtrine Water Coolers



Mess Hall—Cafeteria Cooler

Promote your own condensing unit sales with Filtrine's 20-year-life construction...high capacity... Super Storage... more than 40 years' dependability.

COOLERS FOR MESS HALLS — CAFETERIAS

Conform with Fed. Spec. 00-C-566b

COOLERS FOR X-RAY & PHOTOGRAPHY

PACKAGED CIRCULATING CHILLED WATER SYSTEMS

REMOTE COOLERS FOR ALL USES



Photographic—X-ray Cooler

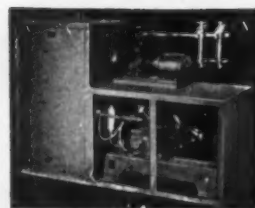
Sell your condensing unit with Filtrine Stainless Steel or Duco finished cabinets, equipped to suit with top/side shelves, bubblers, glass-fillers. Can be Taste-Master equipped to remove chlorine, rust, sediment from water.



Taste-Master

Sell your condensing unit with Filtrine models repeatedly named by V.A., Signal Corps, Air Force, etc. for X-ray, and photo-labs. Under counter design and floor-mounted models with stainless steel work-table top. Filters (extra) to prevent scratched and pin-holed negatives.

Sell your condensing unit! Systems for drinking or processing water—completely packaged with pump, controls, your condensing unit factory installed. Capacities 5—400 g.p.h.; storage 5—150 gals. Filters and Rectifier-Dechlorinators (extra) to insure taste-free, sparkling water.



Typical "Packaged" Circulating Chilled Water System

Sell your condensing unit with remote models for new and replacement jobs—all applications. Capacities 10—1000 g.p.h.; storage 7—300 gals. Filters, Rectifier-Dechlorinators available for all sizes.



Remote Model Coolers



Write for Catalog and Specification Guide
FILTRINE MANUFACTURING COMPANY • BROOKLYN 5 • N. Y.

"Water Coolers and Filters for 40 Years"

Circle No. 35 on Reader Service Card

THIRD-QUARTER SALES CONTINUE UPWARD TREND

Figures based on reports submitted by members of the National Commercial Refrigerator Sales Association indicate that business for the third quarter of 1953 continued to show a steady upward trend.

Average percentage comparisons against the same periods of 1952 follow:

Total dollar sales for first 9 months of 1953 up 12% compared with the first three quarters of the previous year; total dollar sales for the third quarter up 11.58%; net profit for the first 9 months up 7.52%; inventory as of Sept. 30 up 1%; accounts receivable as of Sept. 30 up 7%.

JORDON FURNISHES CASES TO FOOD RETAILERS

A new plan to furnish retailers a Jordon commercial refrigerator or freezer cabinet at no cost has been announced by E.A. "Terry" Terhune, vice president in charge of commercial sales for Jordon Refrigerator Co.

He made the announcement at a Jordon sales meeting at the Hotel Cleveland during the 8th All-Industry Show.

Terhune discussed the new plan in detail, announcing that the special Jordon program entails a joint sponsorship by Jordon and frozen food distributors in each market. Actual distribution of the Jordon

cabinets would be made by frozen food distributors who supply food retailers on an exclusive basis.

"The one big problem the food industry is encountering today is that retailers do not have enough cabinets in which to store and display foods which need refrigeration," he told the Jordon field staff. "Retailers, for the most part, complain that even though they would like to put more cabinets in, they just can't afford the outlay of cash.

"The Jordon plan will give such retailers the cabinets they need at no cost to them," he declared.

TWO MORE MEMBERS ENTER NCRSA FOLD

One more distributor and another manufacturer have been added to the membership roster of the National Commercial Refrigerator Sales Association, it is reported in this group's latest news letter.

New distributor member is Perfectold, Inc., Los Angeles, Calif. The manufacturer member is Victory Metal Mfg. Corp., Philadelphia, Pa.

APPLY FOR MEMBERSHIP

Two more contracting firms have made application for "A" membership in the Refrigeration and Air Conditioning Contractors Association, it is reported in a recent issue of RACCA's News Letter.

These two firms are: Mullins Bros. Co., Minneapolis, Minn., and Western Heating & Ventilating, Inc., Las Vegas, Nev.

COLDIN NAMES NEW PHILADELPHIA OUTLET

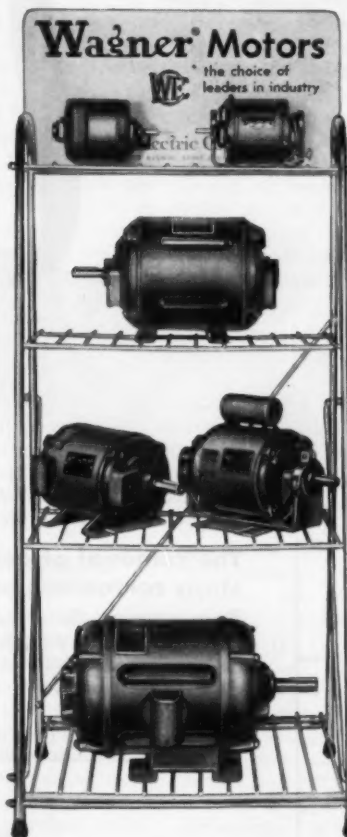
Coldin Cabinet Co. has appointed Beetam & Brody, Philadelphia, Penn.; exclusive distributors for its products in Philadelphia and surrounding areas.

Commercial refrigeration sales division of this organization will be headed by Leonard DeStefano, sales manager, who has had extensive experience in this type of merchandising.

BUY FROM YOUR REFRIGERATION WHOLESALE

GENUINE JOE SAYS:

BOOST REPLACEMENT MOTOR SALES!



it's good business for you!

When you sell a Wagner Quality Motor, you are sure of making a profit—and a satisfied customer.

It's easy to sell these rugged, dependable, well-known motors—especially when you show them on this chrome and cadmium plated display rack, with its three-color sign.

You can get this attractive motor merchandiser for only \$9.95, with the purchase of any 10 Wagner motors of your selection in one lot. Order from your Wagner branch today.

Let this Merchandiser build sales for you
Only \$9.95

with the purchase of any 10 Wagner Motors in one lot.



WAGNER ELECTRIC CORPORATION
6442 Plymouth Ave., St. Louis 14, Mo., U. S. A.

MOTORS • BEARINGS • STANDARD ROTORS
BRUSHES • CAPACITORS • COMMUTATORS

OVER 750 AUTHORIZED SERVICE STATIONS OR PARTS DISTRIBUTORS

MS 54-1

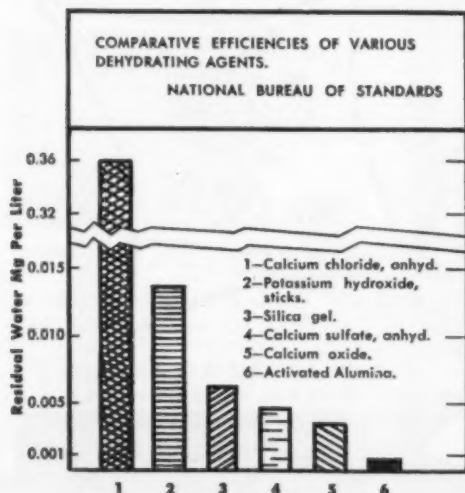
Circle No. 36 on Reader Service Card

"ACTIVATED ALUMINA DRIED . . . TO A
LOWER DEW POINT (MOISTURE CONTENT)
THAN ANY OF THE OTHER COMMERCIAL
SOLID ADSORBENTS TESTED."

From the National Bureau of
Standards report on Activated
Alumina (the ANDRITE desic-
cant in ANSUL REFRIGERANT
DRIERS).

Would you
want to argue
with the
NATIONAL
BUREAU OF
STANDARDS?

HERE ARE THE FACTS . . .



Andrite is a new development in activated aluminas which provides 40% greater drying area. This product is specially processed by Ansul for use in T-Flo Driers. *Andrite* removes moisture and acid which cause corrosion* in refrigeration systems. In fact, *Andrite* continues to remove harmful acids even when it is completely saturated with moisture.

The removal of acid and water, stops corrosion permanently.

By preventing the accumulation of acids in a system, leaky valve plates, leaky seals, and ruined hermetic windings can be eliminated. Systems protected by Ansul's Deep-Drying *Andrite* remain clean, factory bright and trouble free in operation.

*Ansul T-Flo Driers filter dirty systems, removing foreign substances and corrosion solids from previous contaminations.



ANSUL
Chemical Company

REFRIGERATION DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF REFRIGERATION PRODUCTS, INDUSTRIAL AND FINE
CHEMICALS, LIQUEFIED GASES AND FIRE EXTINGUISHING EQUIPMENT

Circle No. 37 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

NEWS OF THE INDUSTRY

1ST CANADIAN SHOW FEBRUARY 23-25

The largest display of refrigeration and air conditioning equipment in the history of Canada will be assembled for the First Canadian Refrigeration and Air Conditioning Show at the Coliseum, Toronto, Feb. 23-24-25, 1954. The show is expected to be a major industrial event in Canada.

Sponsored by the Canadian Refrigeration Manufacturers Association, the exposition is designed to attract consulting engineers, architects, service engineers, dealers, wholesalers, and contractors all the way from British Columbia to Newfoundland. The Refrigeration Service Engineers Society (Canada) will hold a national convention at the same time. Dealers interested in household refrigeration, home summer air conditioners, food freezers etc., are being invited as well as locker operators and such large users as dairies, ice cream plants, chain groceries, hotels and restaurants etc.

On Thursday, Feb. 25, the show will be open to the public who will see "Heating The Home With Refrigeration." Estimates as to the value of the equipment to be exhibited range up to and over a million dollars.

NEW LOCATIONS SET FOR TRANE OFFICES

Trane Co. has announced the new location of the Greensboro, N. C., sales office.

The Charlotte office, managed by Loy F. Thompson, is located at 531 Northgate Avenue. Address of the Raleigh office is 510 Rose Lane.

G-E PLANS HERMETIC MOTOR PLANT

General Electric Co. plans to build a multi-million dollar plant and headquarters at Holland, Mich., for its hermetic motor department according to H. A. MacKinnon, vice president of the company's Component Product Div.

The new installation, according to Ab Martin, manager of the G-E department, will be a single-story structure, using the latest fabricating equipment and methods. Much of the manufacturing area will be air conditioned to meet rigid requirements of cleanliness.

Present plans call for breaking ground this Spring, and manufacturing will start early in 1955.

Martin explained that the new plant is necessary to meet the rapidly growing demand for hermetic motors used by the refrigeration and air conditioning industries.

EUREKA WILLIAMS SELLS MFG. ASSETS

Sale of the manufacturing assets of Eureka Williams Corp., Bloomington, Ill., to Henney Motor Co., Freeport, Ill., was approved at a special meeting of the Eureka Williams stockholders.

Freeport Co., of which C. Russell Feldmann is president and principal stockholder, manufactures specialized automotive bodies.

Eureka Vacuum Cleaner Co. was organized in Detroit in 1910. The Williams Oil-O-Matic Heating Corp. started operations in Bloomington, Ill., in 1919. The two firms merged in 1945 and have main offices and the plant in Bloomington.

GENERAL CHEMICAL EXPANDS LA. PLANT

A major expansion in the "Genetron" refrigerant manufacturing facilities of General Chemical Div., Allied Chemical & Dye Corp., is well underway at the company's Baton Rouge, La., works.

The company reported that increasing tonnages of the refrigerants, dichlorodifluoromethane and trichloromonomofluoromethane, which General markets as Genetron 12 and Genetron 11, are already pouring off the line as a result of work finished to date on the expansion.

Production capacity of the large new Baton Rouge plant will be tripled by this expansion.

AIRTEMP'S '54 LINE INCLUDES UNIT FOR CASEMENT WINDOWS

Descriptions and prices of Chrysler Airtemp's 1954 "Power-Full" line of room air conditioners have been revealed by J. F. Knoff, vice-president and general sales manager of Chrysler Corp.'s Airtemp Div.

Addressing 300 midwest Airtemp salesmen at Chicago's Sheraton Hotel, Knoff unveiled the newest product in the room air conditioner field, a ½-hp. room air conditioner designed especially for casement windows.

Also presented at the same time was a new, ½-hp. model to be added to the company's ¾ and 1-hp. models of conventional room air conditioners. Knoff said that a heating feature will be available on ¾ and 1-hp. models through the use of a reverse cycle feature that extracts heat from outside air.

ARI CONFERENCE SET MARCH 11 AT LONG BEACH, CAL.

More than 2,000 refrigeration service engineers, contractors, wholesalers and manufacturers from all parts of the country are expected to attend the ARI Educational Conference on commercial refrigeration and air conditioning to be held on March 11-12-13, 1954, at the Municipal Auditorium in Long Beach, California.

It is expected that 75 or more of the leading manufacturers of commercial refrigeration and air conditioning equipment will furnish displays. The exhibits will be sponsored by the Air-Conditioning and Refrigeration Institute of Washington, D.C.

Separate speaking programs by industry experts will be sponsored by the Refrigeration Equipment Wholesalers Association, the Refrigeration and Air Conditioning on page 50

REMINGTON REPORTS SALES UP 97%

Herbert L. Laube, president of Remington Corp. has announced that sales for the fiscal year ended October 31, 1953, were 97% higher than those of the same period last year.

Although final figures for the fiscal year ended October 31 are not yet ready, Laube said that combined sales at home and abroad of window and console type room air conditioners amounted to \$6,407,414, as compared to \$3,246,811 for the previous fiscal year. Laube also said, "A substantial increase in sales is expected in 1954 as more and more people classify air conditioning as a necessity."

GEN. CONTROLS OPENS N. Y. HEADQUARTERS



DURING THE OPENING of General Controls' new regional office and warehouse in Long Island City, Doug Sterner (center) refrigeration division manager for the firm explains one of its expansion valves to Larry Diffenderfer (left) New York Refrigeration Supply Co. and to Warren Edwards, manager of N.Y. Refrigeration Supply.

General Controls Co. has opened a new combined regional office and warehouse headquarters in Long Island City, N. Y. which comprises over three times the area of previous company locations in that region.

Formerly, the firm maintained warehousing facilities at Newark, N.J., and regional offices in downtown New York City.

Included in this new building will be an expanded export department which will take over complete charge of handling materials for foreign sales, a function formerly handled jointly with the company's headquarters.

A reconditioning department has also been added, designed to offer repair and replacement service to eastern accounts on standard replacement and reconditioned controls from stock to dealers and jobbers.

NEW BALLY BRANCH IN NEW YORK CITY

Bally Refrigeration Sales, Inc., has been established in New York City to serve as direct factory branch for Bally Case & Cooler Co.

President of the corporation, which will serve the entire metropolitan New York area, is Herman Mazur, a pioneer in the development of a meter plan for selling refrigerated display cases.

READING TUBE CORP. MOVES SALES OFFICE

Martin Mack, president of Reading Tube Corp. has announced the removal of the company's sales and executive offices from Long Island City, N.Y. to the Empire State Building, New York City.

Removal of Reading's eastern distribution depot from Long Island City to 57-15 Northern Blvd., Woodside, N.Y., effective February 1, 1954, has been announced.

NEW WESTINGHOUSE PLANT BEGINS WORK

Completion of the first refrigerator at the new \$45 million electric appliance division plant in Columbus, Ohio, officially marked the production debut of the largest manufacturing plant Westinghouse Electric Corp. has ever built.

Although construction in some areas of the vast plant, which contains 2,000,000 sq. ft. of floor space, has not yet been completed, a limited amount of production has been started by a small force of approximately 500 workers.

Eventually, the plant will employ between six and seven thousand workers and will produce approximately 4,000 major appliances a day, most of which will be refrigerators and freezers.

ARI CONFERENCE . . .

Continued from page 49

ditioning Contractors Association and the Refrigeration Service Engineers Society which will hold a convention of the California State Association of RSES in connection with the educational conference.

Heading up the activities of the four groups are: E. M. Flannery, chairman, ARI educational conference committee; A. E. Johansen, general chairman, Refrigeration Service Engineers Society; A. Starr Hull, executive secretary, Refrigeration Equipment Wholesalers Association; and Ray Kromer, executive vice president, refrigeration and Air Conditioning Contractors Association.

The entire main floor of the Long Beach Municipal Auditorium will be used to house the exhibits. The Wilton Hotel will be headquarters for exhibitors. Headquarters for RSES will be the Lafayette Hotel.

The service engineers, contractors and wholesalers will each conduct their own speaking program on Thursday and Friday with a general program for all groups set for Saturday morning.

Hotel reservations should be made well in advance by writing to Al Haun, Housing Chairman, Municipal Auditorium, Long Beach, Calif.

SERVEL SHOWS 1954 CONDITIONER LINE

Servel's line of 1954 air conditioning equipment was introduced to distributors and dealers during a series of six regional sales conferences held last month. Conferences were held in Los Angeles, Houston, Dallas, Atlanta, New York, and Chicago.

The conference held in Dallas was especially for gas utility executives. John A. Gilbreath, assistant vice president in charge of air conditioning and H. R. Nielsen air conditioning sales manager, handled the arrangements.

PRICES REDUCED ON G-E HEAT PUMPS

A price decrease of 20 to 25% on General Electric heat pumps has been announced.

H. M. Brundage, general manager of the G-E Weathertron Dept., under which name the company's all-electric year-round air conditioner is marketed, credited rapid market development, improved product design and increasing demand for the product as responsible for the price reduction.

Predicting industry sales in 1954 would increase threefold over this year's sales, Brundage said that prior to today's price reduction the installed cost of the Weathertron in the home ranged from \$3,000 to \$4,000, depending on the duct work, size and type of home.

PREDICTS BOOM IN ELECTRONIC FILTERS

Sale of "electronic air cleaners" will boom in the next five years, according to John D. Meyer, sales manager of the appliance division of Trion, Inc., manufacturers of residential electronic air cleaners.

Riding on the heels of air conditioning, it is estimated that at least 10% of the homes in which central air conditioning is installed will be equipped with electronic air cleaners.

The American Institute of Management estimates that there will be 2 million homes with central air conditioning by 1958.

This would mean that at least 200,000 electronic air cleaners could be installed by that time.

In 1954, best indications are for 120,000 central home air conditioning installations, which could mean 12,000 electronic air cleaners.

Meyer added that 10% is a modest percentage for the addition of this type air cleaning equipment to year-round air conditioning. He predicted that within the next ten years, no home over \$10,000 will be built without both year-round conditioning and electronic air cleaning.

SHOW DIFFERENCES THAT 25 YEARS MAKE



COMPARING THE FIRST Frigidaire room cooler with the 1954 version are Mason M. Roberts, left, Frigidaire general manager and General Motors vice president, and William F. Switzer, manager of commercial refrigeration and air conditioning sales. The original model was built in 1929 and sold for \$600 f.o.b. Dayton. The comparable model of today, although benefiting from 25 years of research and development, sells for a little over half that amount.

SERVEL REPORTS '53 SALES UP 100%

Record-breaking sales of air conditioning equipment in the 2 to 25-ton range during 1953 have been reported by Servel, Inc.

In November, the company's sales volume on all-year air conditioners and heavy duty water chillers was already 101.2% ahead of 1952 figures, according to John A. Gilbreath, assistant vice president in charge of air conditioning.

One of the contributing factors in Servel's increased volume has been the adoption of all-year gas air conditioning as a built-in feature of homes in large housing developments, Gilbreath declared.

Another contributing factor, said Gilbreath, is the large number of hotel and motel operators that have turned to air conditioning.

"Their consideration for the comfort of the traveling public has been another big factor in our increased sales volume."

The demand for Servel's 25-ton water chillers has been greatly increased this year, Gilbreath added, by the discovery and development of many new uses for chilled water in industrial processing.

G-E DEPT. ALTERS PRODUCTION SETUP

Part of the 1954 line of General Electric home heating and cooling equipment will be produced at Trenton, N.J., in a new plant acquired last July according to S. J. Levine, general manager of the G-E home heating and cooling department.

The Trenton plant, which has 300,000 sq. ft. of manufacturing area, will supplement production at the department's headquarters in Bloomfield, N. J.

The G-E home heating and cooling department originally acquired the Trenton plant to meet increasing demand for home cooling equipment.

WOOSTER FORMS DISPENSER DEPT.

The Wooster Brass Div. of Fyr-Fyter Co. has established a new, integrated beverage dispenser department as the first step towards expanding its market in the manually operated soft drink dispensing equipment field.

Wm. F. O'Loughlin, a sales engineer for the company since 1951, has been appointed department manager.

Drayer-Hanson EXTENDED SURFACE COILS *are noted for their performance!*

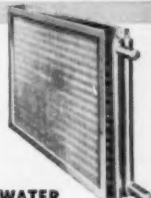
The key to performance is ample prime and secondary surface. Compare D-H coils with others!



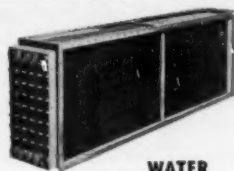
STEAM
D-H Standard Type S
(Non-Freeze, Type NF
also available)

for heating or cooling using steam...water... or direct expansion!

5 MODELS TO CHOOSE FROM



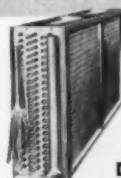
WATER
Continuous Tube, Type CT



WATER
Removable Header, Type RH



WATER
Removable Plug, Type OR



**DIRECT
EXPANSION**
Type DX



One of the nation's
oldest coil manufacturers

drayer-hanson

INCORPORATED

3301 MEDFORD STREET, LOS ANGELES 63, CALIFORNIA

TYLER NATIONAL SALES STAFF ATTENDS CONFERENCE



THE NATIONAL SALES STAFF of Tyler Refrigeration Corp. recently attended a four-day sales conference at the firm's main plant. Posing before a new Tyler mobile display unit are: (Front row, left to right) Bob Campbell, sales; Foster Brandon, assistant service manager; Art Perez, service manager; Charles Naas, assistant advertising manager; Robert L. Tyler, president; Chet Ford, sales; Sam West, assistant sales manager; Jim Widner, credit manager; Keith Metzger, sales; J. B. Hennion, sales promotion manager. Standing (Back row, left to right) Paul Jackel, vice president; national accounts; Les Hickox, sales; Rex Holmes, sales; Bob Meyers, sales; Sam Wellingham, sales; Bill Gallagher, sales; Earl Waldron, sales; Bill Prah, sales; Ed Knight, sales; George Brauer, sales; Dick Schaffer, sales; Russ Koester, sales; Frank Molitor, sales; Jack Dickie, merchandising director; Ron Nelthorpe, sales; Jay Alvarez, export manager; Roger Sisson, sales; Bill Fargo, sales; Dock Autrey, sales; Charles Fitzsimmons, sales; Art Curran, super. agency sales; Ray Greene, sales manager; and Doyle Carpenter, experimental.

ROOM COOLER PRICES ANNOUNCED BY G-E

General Electric Co.'s recommended national retail prices ranging from \$449.95 to \$229.95 for its 1954 line of room air conditioners have been announced by H. B. Donley, general manager of the specialty refrigeration products department.

The 1954 line includes models in four sizes—1, $\frac{3}{4}$, $\frac{1}{2}$, and $\frac{1}{3}$ hp. The $\frac{3}{4}$ -hp. model also is available with reverse cycle operation for heating as well as cooling.

WAGNER ACQUIRES NEW FACILITIES

A five acre tract of land containing five buildings with an aggregate 125,000 sq. ft. of floor space has been purchased from Fulton Iron Works Co. by Wagner Electric Corp.

Terms of the transaction provide that Fulton Co. will continue to occupy the premises for one year.

Manufacturing buildings on this tract, which is adjacent to Wagner's present property, are mill type construction and are equipped with heavy cranes. Office buildings are of concrete.

ENGLISH MOTORS TO MAKE BOW IN U. S.

Brook Motor Corp., Chicago, has been organized as a subsidiary of Brooks Motors, Ltd., England, to introduce and direct U. S. and Central American sales of the parent company's electric AC motors.

In charge of the new Chicago firm are M. E. Stern, vice-president and assistant treasurer, and Peter L. Lowe, vice-president and assistant secretary.

Motors will be available for immediate shipment from warehouse stocks in Chicago and other centers. Franchised dealers in key cities will provide service on these motors throughout the U. S. A.

Motors stocked for marketing here range from 1 to 50 hp and have been engineered to provide many features of advantage to United States users.

Both single and polyphase motors are offered in four major types—open drip proof, splash proof, totally enclosed non-ventilated and totally enclosed externally fan-cooled. Ball bearings are interchangeable and are standard, as are nuts and threads.

G-E REORGANIZES MOTOR DEPARTMENT

Discontinuation of the General Electric Co.'s fractional horsepower motor department and establishment of four new departments to take over its operations has been announced by Harold A. MacKinnon, vice president and general manager of the company's Component Products Div.

The four new departments and their managers are: general purpose component motor department, Lisle D. Hodell; hermetic motor department, Ab Martin; appliance motor department, Carl W. Moeller; and specialty component motor department, Jack J. Clarkson.

All managers will have their headquarters in Fort Wayne except Moeller who will be in DeKalb, Ill.

EMERSON ELECTRIC STARTS PRODUCTION

Production of Emerson Electric Room Air Conditioners has been begun in the manufacturing facilities of Automatic Firing Corp., St. Louis, Mo., whose engineers cooperated with Emerson Electric engineers in the design of the units.

USAIRCO LEASES ADDITIONAL SPACE

United States Air Conditioning Corp. has more than doubled its manufacturing space with the lease of the group of industrial and office buildings on the 25-acre tract adjoining its existing main plant and offices in Minneapolis, Minn.

The first step in a long-range program planned by the company's new management, the leasing transaction involves approximately 138,000 sq. ft. of modern, well-equipped manufacturing area and more than 11,000 sq. ft. of office space, owned and formerly occupied by Minneapolis-Moline Co.

"During 1953, the company's production increased by 50%, resulting in a serious overloading of plant facilities," according to D. E. Feinberg, vice-president and general manager. "The newly acquired space will provide room for greater expansion of production."

"This move, tied in with the company's future plans, calls for growing emphasis on its packaged refrigeration division which during the past year accounted for a major portion of total sales," Feinberg said.

This division produces self-contained central station air conditioning equipment, packaged air conditioning units for store and offices, home air conditioners and window-type room air conditioners.

The newly leased factory buildings will be utilized for the manufacture of coils, blowers and room air conditioners. All departments were scheduled to be in full operation by January 15.

CAPACITY UPPED BY QUIET HEET

Quiet-Heet Mfg. Corp. has completed the modernization of 100,000 sq. ft. of space in their Newark, N. J. plant which is part of an expansion program providing almost four times more production capacity. The expansion allows the consolidation of manufacturing, engineering, testing and warehousing facilities under one roof.

BRYANT REDUCES PRICES UP TO 24%

Price reductions ranging up to 24% on its full line of air conditioning equipment have been announced by Bryant Heater Div., Affiliated Gas Equipment, Inc.

The reductions, effective immediately, are designed to make Bryant's air conditioning equipment much more readily available to builders of popular priced new homes, and to owners of existing homes not equipped with summer air conditioning, according to W. H. Wise, Bryant's director of sales.

Affected by the reductions are: Three sizes of the Model 590 summer air conditioner; Two Model 581 duct central air conditioning units; and three room air conditioners.

NEW FARR OFFICE

A southern division sales office in Memphis, Tenn., has been established by Farr Co. Donald Harworth, southern division sales manager, is in charge of the new office.

NEW PLANT STARTED BY WESTINGHOUSE

The Westinghouse Electric Corp. has broken ground for a new air conditioning plant at Staunton, Va.

According to Harry E. Seim, Westinghouse vice president and general manager of the Air Conditioning and Sturtevant Divisions, "This plant will increase our productive capacity for packaged air conditioners five-fold and will enable us to keep pace with the growing demand for residential, commercial, and industrial air conditioning equipment."

Capacities of these packaged-type units will range from 2 to 15-tons. The Westinghouse air-to-air heat pump will also be produced here.

The Sturtevant Div. at Hyde Park, Mass., will continue to make fans, blowers, coils, industrial heaters and Precipitron electronic air cleaners. Also the heavy duty mechanical draft equipment for power plants and vehicular tunnel ventilation will continue there.

the Dean Says—

NOW . . . BUY YOUR PLATES IN THE SIZES YOU NEED!

ZINC METALLIZED STEEL, STAINLESS STEEL AND OTHER METALS. CYLINDERS, U's, ANGLES, TANKS, ETC.



DEAN

"JOB TAILORED"

DEAN COLD PLATES

for
FROSTED FOOD DISPLAY
CABINETS
ICE CREAM CABINETS
SODA FOUNTAINS
FARM MILK COOLERS
FARM FREEZERS
LIQUID COOLERS
WINDOW DISPLAYS
FOOD COUNTERS
LOW TEMPERATURE
TEST ROOMS
REFRIGERATED TRANSPORTATION

Plates also available for Bessemer-type Coolers

"JOB TAILORED" EVAPORATOR PLATES

Now you can get your plates exactly as you want them . . . any size . . . any shape . . . any metal! Think what this means in time saved . . . MONEY SAVED! Before you buy another plate, get the facts on DEAN "Job tailored" cold plates. It will be well worth your while! Ask your jobber, or write

DEAN PRODUCTS, INC.
1042 Dean St., Brooklyn 38, N.Y.
Sterling 9-5400
Write for Technical Data Book

Circle No. 41 on Reader Service Card
and AIR CONDITIONING • FEBRUARY, 1954

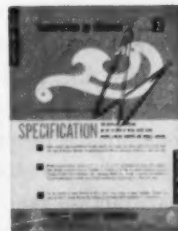
SAVE MAN HOURS USE MIRACLE ANCHOR METHOD



Ford Motor Corporation, Dynamometer Building, Dearborn, Michigan: Application of Rock Wool Batts by use of Miracle Anchors, bonded with Miracle Adhesive.

To attach insulation to ceilings and walls use Miracle Anchors and Adhesives. Eliminates drilling or welding.

FREE: Send for colorful informative brochure on Miracle Anchors, which details savings in man hours and costs by use of the Miracle Anchor Method.



MIRACLE ADHESIVES CORPORATION

214 EAST 58RD STREET, NEW YORK 22, N. Y.

and all Principal Cities and Canada

Circle No. 40 on Reader Service Card



"This is wonderful stuff!"

This stuff, as the man calls it, is Permagem. It's the sealing compound which maintenance and service engineers prefer for sealing cases, inspection plates, pipe openings. They know this is the ideal way to stop customer dissatisfaction before it can start, because moist air permitted to seep into a cabinet can cause condensation as well as a host of untold complications.

This serviceman is using brown Permagem, which comes in 2½ lb. and 45 lb. slugs. This heavy-duty sealer will adhere to any dry surface and will never harden, staying plastic from 0° to 350°F. There is also gray-white Permagem, which comes in 80 ft. rolls of ¾" cords. It is odorless; it never hardens; it can be painted immediately. It is also ideal for sealing around wires, since it

won't attack rubber insulation.

Your wholesaler stocks Permagem. Or write **Refrigeration Dept., VIRGINIA SMELTING COMPANY, West Norfolk 64, Va.**

VIRGINIA
Chemicals

ESOTOO • KINETIC CHEMICAL'S "FREON" REFRIGERANTS
V-METH-L • CAN-O-GAS • PERMAGUM • PRESSTITE TAPE
SOLVEX PRODUCTS • SUNISO REFRIGERATION OILS

Circle No. 42 on Reader Service Card
FEBRUARY, 1954 •

COMMERCIAL REFRIGERATION

THE COMMERCIAL REFRIGERATION and AIR CONDITIONING

APPLICATIONS MANUAL

by Hugo C. Smith

Readers are invited to submit their problems to this department. Each letter of inquiry will be answered personally by the author. All problems should be clearly and completely stated and addressed to: **COMMERCIAL REFRIGERATION AND AIR CONDITIONING**, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

Selection of Correct Walk-In Controls Reduces Loss of Moisture in Food Products Stored

THE basic reason for walk-in coolers and freezers is to preserve foods. How well they do their jobs in many instances is dependent upon the selection of proper control equipment.

Close observers within the industry have for many years known that one of the prime requisites of good food preservation was close temperature control. Perhaps the most startling evidence of this need is loss of moisture in the product.

Coolers that control within a differential of 4° to 5° will show a much greater drying action than coolers that are controlled within 2° or less. Each time we increase the temperature of the product we raise the moisture vapor pressure within the individual cells of the product, and some moisture is lost from those cells to the surrounding atmosphere. The lower the relative humidity in the box when this action takes place, the greater the loss of moisture will be.

Three Methods of Control

Walk-in coolers* are controlled in general by three methods:

- (1) Thermostats responsive directly to air temperature change.
- (2) Thermostats responsive to evaporator temperature change.
- (3) Pressurestats responsive directly to suction pressure change.

The first method will control 35° coolers within 4° differential, or plus or minus 2° (37° to 33°). Thermostats are readily obtainable on the market with a differential of 1/2° to 1° at 70 F control temperature, but as the control temperature is lowered the differential is increased. This is due to lessened pressure per degree of change exerted on the mechanism by

the refrigerant-charged bulb in the lower ranges.

In zero F freezers, differentials of as high as 5° to 7° may be expected with this type of control.

Thermostatic control may also cause difficulty in automatic defrosting coils if the box is overloaded, resulting in an extremely long compressor cycle. Coils may frost rapidly, thus decreasing their efficiency to a point where they are unable to satisfy the thermostat. Similar continuous running may also result from a partial loss of gas.

Third Method Is Simplest

The second method of control, that of placing the bulb directly on the evaporator or suction line, is not popular in walk-in cooler work but is extensively used in domestic refrigerators, freezers, and small self-contained commercial appliances.

In this application a thermostat of relatively wide adjustable differential, say 3° to 25°, is used. Box temperature may be controlled closely (1° to 2°), and automatic defrosting of coils is assured.

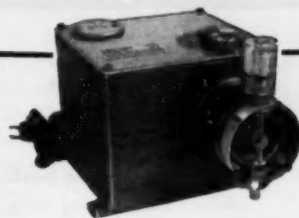
Compressor will cut off if partial charge of gas is lost. Wiring is required between the compressor and the thermostat unless the thermostat is used to control a liquid line solenoid valve, in which instance the low-pressure cut out would be used to cycle the compressor.

The third method of control, the employing of a low-pressure control, is the simplest and best for most applications. Also, it is generally the most economical.

Usually the pressurestat is furnished with the compressor. Additional

Circle No. 44 on Reader Service Card

PRECISION CHEMICAL PUMPS



for

- Corrosion Control
- Scale Removal
- Iron Removal
- pH Adjustment
- Concentrated Sulfuric Acid

PRECISION
MACHINE COMPANY
8 WALNUT ST., SOMERVILLE, MASS.

LARKIN
means low prices!



LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

Manufacturers of the original Cross-Fin Coil
• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils
• Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS
519 MEMORIAL DR., S.E. • ATLANTA, GA.



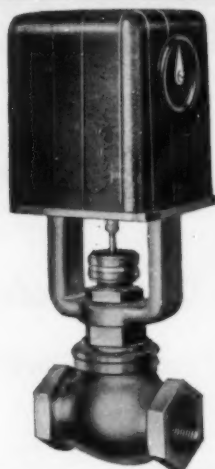


PROPORTIONING

Motor-operated Valve

Compact... Costs less...

- For heating coils on package heating and air conditioning units.
- Tight-closing, low-pressure, for proportioning (modulating) control.
- Extremely compact—largest size not over 14 3/8" x 4 3/8".
- Sizes 1/2" to 2", inclusive
- Greatest valve value on the market.



ASK

Consult nearby Field Office or write us

BARBER-COLMAN COMPANY, ROCKFORD, ILLINOIS, U.S.A.

Dept. B, 1338 Rock St. • Field Offices in principal cities

For Bulletin No. R-3622-2...complete data, including ratings and dimensions.

Automatic Controls • Air Distribution Products • Industrial Instruments
Aircraft Controls • Small Motors • OVERDOORS and Operators • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

wiring is not required. If evaporators have been sized to 10° t.d., box temperature may be controlled within 1/2 of 1° plus or minus. Where evaporators are sized to 15° t. d., control of 1° plus or minus may be expected.

With this type of control, the evaporator in effect becomes the bulb of the pressurestat. Automatic defrosting is easily controlled by keeping the cut-in above 35 lbs. for Freon installations.

Effectiveness of this control method is indicated by the fact that on one cooler we equipped, using low-pressure control and two separate refrigeration systems, we have easily held cooler temperatures to plus or minus 1/4 of 1°. Incidentally, the owner of this cooler reports he can hold his products for double the storage times listed by the U.S. Dept. of Agriculture.

"AUTOMATIC" STORAGE PLANT IS DESCRIBED

A food freezing and storage plant that operates with a minimum of attention is described and illustrated in a new booklet published by Carrier Corp. The plant is the Hopkins, Minn., warehouse of Merchants Refrigerating Co.

Ten Carrier ammonia reciprocating compressors supply 305 tons of refrigeration to quick-freeze 300,000 lbs. of "bulk" foods every 24 hours, while holding 21 million lbs. in storage. The low-temperature two-stage system produces temperatures as low as -35° to -40°F.

Automatic controls permit the refrigerating system to operate with no one in attendance 16 hours of each day and over weekends. In the event of malfunction during off hours, electric relays automatically shut down the machines affected and sound an alarm in the home of the plant engineer. If no response is received the call for attention is directed to a local service organization.

The refrigerating machinery also can be simply regulated for any or all of the 13 cooler rooms to quick-freeze various foodstuffs in accordance with production and marketing demands.

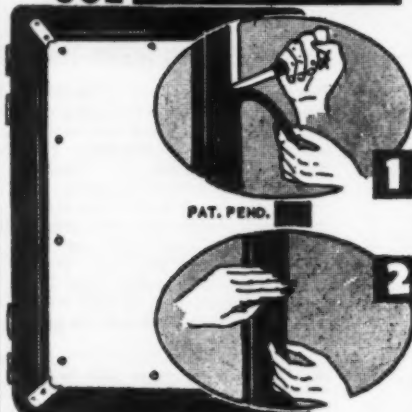
Aerial and action photographs in the booklet picture the plant, its mechanized handling system, and its automatic refrigeration. Copies are available on request from Carrier Corp., Syracuse, New York.

WHY SPEND HOURS

REPLACING THE ENTIRE GASKET ON
FRIGIDAIRE AND COLDSPOT DOORS

ATSCO
USE **NU-BEAD**

Jiffy Installation
with the
New Improved*
Adhesive



*SIMPLY MOISTEN GASKET WITH GASOLINE

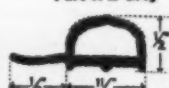
Most door seals of Frigidaire and Coldspot deteriorate only at the bead. Stop repairing them the old way. Now you don't have to take 3 or 4 hours to dismantle the door and replace the entire seal. Use Revolutionary NU-BEAD and get a quick clean repair in 15 to 20 minutes that will satisfy the most exacting customer.

Simply cut away the deteriorated bead with a sharp knife. Don't worry about any irregularities in the trimming as the NU-BEAD covers up all the defects. NU-BEAD is made of finest grade natural rubber in 12 ft. lengths with a special adhesive already applied at our factory.

Available for all Models

Part R-1 Black

Part R-2 Grey



Available at Your Jobber

Wagner Tool & Supply Corp.

REFRIGERATION PARTS AND TOOLS

40-08 22nd ST., L. I. City, N. Y.

PAYROLL . . .

Continued from page 43

with one proviso, that the sums drawn represent a reasonable wage for the services performed.

If the serviceman buys his wife a fur coat, draws the money to pay for it out of the business and charges it to his drawing account, he should not include this as compensation under overhead expense, although it is income and taxable. Such extraordinary expenses should be segregated on the books.

Strange as it seems, cases have been known where heavy withdrawals have been charged to a drawing account and transferred at the end of a period to overhead expenses.

The operating costs were inflated and the serviceman in a dither because he found so little net recorded on the profit and loss statement. This is the opposite extreme of not including compensation for personal services under overhead expense resulting in an inflated net.

The serviceman, dealer, or con-

tractor must pay income tax on his total income, so it makes no difference whether he draws his money as a salary, has a drawing account, or lets it ride along with the net profit. The erroneous handling of compensation, however, can throw business analysis out of focus. For this reason, it is wise to take a look at your books to make sure that the money you take out of your business is recorded properly.

PLAN THE WIRING . . .

Continued from page 40

(Fig 1). This conduit should pass through a sleeve of cork pipe covering, previously set in the wall, and be carried along the underside of the freezer room ceiling, with leads taken off and distributed to points where lights are desired.

It is good practice to seal the inside of the conduit at the point where it goes through the wall into the freezer. Special sealing condulets, which can be poured with wax, will prevent the infiltration of warm,

moisture-laden air through the conduit into the cold room.

If this precaution is neglected, condensation will in time freeze inside the conduit where it enters the freezer, splitting the metal conduit or causing a short circuit.

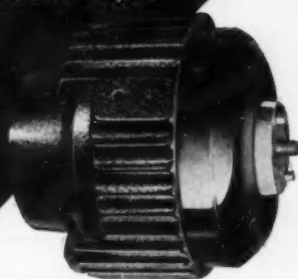
If no provisions have been made for special sealing fixtures, the conduit can be effectively sealed against the entry of moisture by pouring melted wax into a hole drilled into the conduit where it is bent to pass through the freezer wall.

Suspending light fixtures and electrical conduits to the underside of the ceiling often presents a problem. Freezer rooms have from 6 to 8" of insulation on the ceiling. The insulation itself does not provide a firm enough anchor for the weight of the fixtures and conduits. Furthermore, it is hardly feasible to drill six or eight inches through the insulation to obtain solid support in the concrete or wood ceiling slab above.

The problem is readily solved by the use of wooden blocks. At predetermined locations on the ceiling, these wooden blocks are secured

Redmond TYPE AM
SINGLE BEARING MONOMOTORS

—up to 9 watts output.



Interchangeable!

with *any* of the leading, similar size and style, single bearing motors used for refrigeration condenser fans!

Ready for either back or side mounting—let Redmond MonoMotors simplify your replacement jobs!

TOP QUALITY FEATURES include —

- Extra large, permanently sealed oil reservoir
- Pressurized bearing lubrication
- Magnetic alignment accurately maintains rotor position
- Cast iron casing for added protection



• Thermally protected (high impedance)

REDMOND DISTRIBUTORS, INC.
420 Lexington Ave., New York 17, N. Y.

REDMOND DISTRIBUTORS, INC.
420 Lexington Ave., Dept. C, New York 17, N. Y.

Send complete Type AM MonoMotor information to:

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

to the ceiling construction in the first layer of insulation (Fig. 2).

Blocks should be at least 6" x 6" square, and equal in thickness to the first layer of insulation. As the insulation men cover these blocks with the second layer of corkboard, they can indicate their location with chalk. The electrician can then drive lag screws into these blocks to support light fixtures.

For the sake of appearance, some owners object to the suspension of conduits underneath their freezer room ceilings. Where appearance is

the deciding factor, conduits can be placed between the first and second layers of the corkboard insulation (Fig. 3).

Some extra labor is involved in routing out a channel for the conduit between the two layers of corkboard. Also electrical maintenance and repair are complicated to a certain extent.

In the normal operation of a freezer room, however, the electrical wiring should seldom require servicing. If the wiring ever becomes defective, it can usually be pulled

through the conduits at junction boxes, without disturbing the ceiling insulation in any way.

The question of type of wiring, conduit and fixtures for freezer rooms is pretty much at the option of the owner. All wiring should be moisture-proof, although not necessarily leaded cable. Conduit may be thin wall or threaded pipe, galvanized to prevent rusting. Lighting fixtures and pilot light switches should be vaporproof.

Like so many aspects of low-temperature insulated construction, the best electrical wiring system for any particular installation can be assured by adequate forethought and cooperation between the insulation contractor, general contractor, electrician, and owner as the job progresses.

(Material contained in this article first appeared in the ARMSTRONG INSULATOR, published by Armstrong Cork Co., and is reprinted by permission.)

"...especially pleased
with the Tenney
Cooling Units*..."

*Tenney TW Unit Coolers
(TW=Twinn fans and motors)

Pats. pending

Phone: New Egypt-4421

JIM'S WAYSIDE INN
JAMES F. APOLDITE
Cockstown, N. J.

Choice Liquors

Beer

November 18, 1953

Mr. W. T. Firestone, Commercial Mar.
Trilling & Montague
24th & Walnut Streets
Philadelphia 3, Penna.

Dear Mr. Firestone:

I want you to know how happy I am with the changes you made to my beer system, and I want to compliment you on the latest type equipment you installed when making these changes.

I find a big difference in keeping the right temperatures and even temperatures, and I find it much easier to work in and out of the big cooler instead of the little one I had.

I am especially pleased with the Tenney Cooling Units in the storage refrigerator. I was surprised at how little space they take up so that I can use up every square inch of space that I need and, because they set up so high, I can go in and out of the box without having the cold air blow on me.

I hope this gives you some idea of how pleased I am and how much I like the new job.

Very truly yours,

James F. Apoldite

Owner, Jim's Wayside Inn



Typical of satisfied customers' comments the country over! Servicemen, too, appreciate the Tenney TW Unit Cooler for its easier-servicing features—removal of *one* thumb screw exposes all components, *nothing* to disconnect. TW's TWinn fans and motor also mean full dependability—one fan and motor will hold safe box temperature.

Get the *whole* story—clip this ad to your signed letterhead, NOW!



Tenney
ENGINEERING, INC.

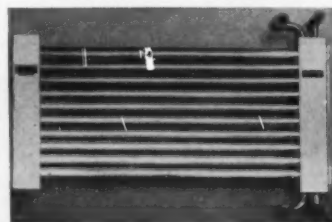
26 AVENUE B, NEWARK 5, N. J.

Plants: Newark, N. J., Union, N. J. and Baltimore, Md.

Engineers and Manufacturers of Automatic Temperature, Humidity, and Pressure Control Equipment

Circle No. 48 on Reader Service Card

CLEANABLE CONDENSER



A SHORT-COUPLED, multi-section condenser specifically designed for use in residential air conditioning systems is being produced by Helstead & Mitchell. These cleanable, counterflow units, designed for the original equipment market, are available in six sizes, from 1 to 7 1/2-tons, for use with Freon 12 and 22 systems.

AIRTEMP DISTRIBUTOR PLACES \$1 MILLION ORDER

Chrysler Airtemp announced that Standard Distributors of Hartford, Conn., has ordered \$1,238,000 worth of Airtemp air conditioners, furnaces and parts.

Placed by Standard's president, Carl J. Sala with Ned F. Foulds, Chrysler Airtemp regional sales manager, the order calls for commercial, industrial, and residential "packaged" air conditioners, warm air furnaces and hot water and steam boilers.

OPPORTUNITY KNOCKS . . .

Continued from page 37

tion unit to pull into the shop, have the unit removed and replaced with a loaner, and be on his way again to complete his run. The defective unit can then be repaired or overhauled in the shop and made ready to be picked up by the trucker on his return trip.

Inventory problems in the truck refrigeration business are considerably greater than for other types of service operation, Heemstra has

BOOK REVIEW

Title: Pipefitters Handbook.
Author: Forrest R. Lindsey.
Publisher: The Industrial Press,
New York City.
Price: \$6.00

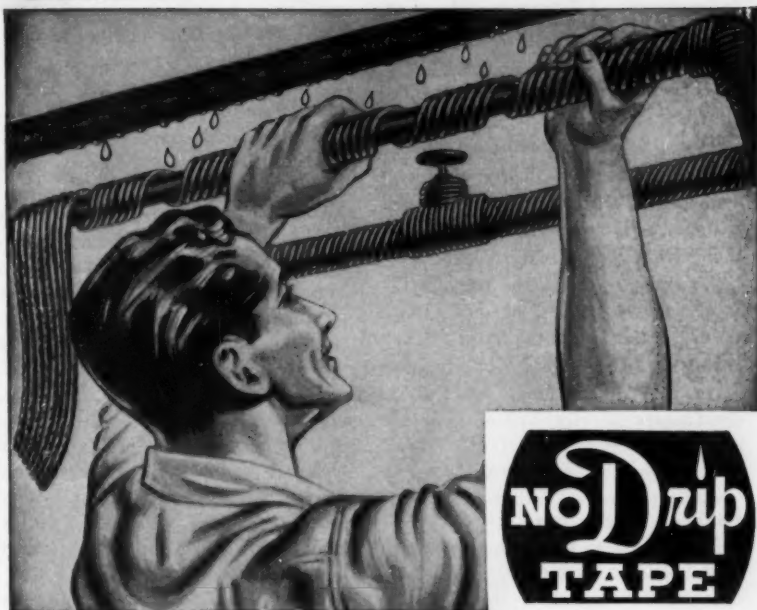
This 4 x 7" handbook is designed to enable pipefitters to solve problems in the shop or field in connection with pipe bending, offsetting, mitering, layout, etc.

Particular aspects and details connected with pipefitting problems, installation and general information are covered in separate sections. Covered in these sections are: worked out figures for setback and length of bend for wide range of angles (degree of bend) and radii; offsets; mitered joints; pipe data; screwed fittings; butt welding fittings; flanged fittings; valves; solder joint fittings; other pipe data; miscellaneous data; mathematical data; and a pipefitters' dictionary.

found. Few parts are interchangeable among the various types of unit in use, yet the service firm must be prepared to replace parts on each type of unit on short notice.

Most of these parts are of such a special nature that they must be ordered directly from the manufacturer instead of being picked up as needed from a local refrigeration wholesaler. This means that a considerably larger — and more costly — parts inventory must be carried than in other types of refrigeration service operations.

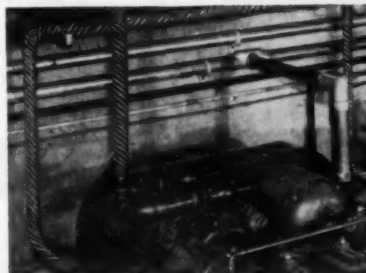
Servicewise, this business is fairly simple and non-competitive, for Heemstra has found that it is best to abide by the manufacturer's price structure and recommended markup. Most similar operations do likewise, so this keeps standards uniform throughout the country. This



STOPS CONDENSATION DRIP

Yes, indeed, it takes care of the vexatious drip and sweating problem connected with cold water pipe installations. NoDrip Tape is pliable, cork-filled, 2" wide. When wound around pipes, it forms a tight fitting, moisture-proof jacket. Holds temperatures steadier, eliminates icing and frosting, prevents rusting, keeps pipes and floors dry.

Just the thing for pipes and suction lines running from refrigerating machines to condensers.



Use on refrigerant lines in air conditioning systems, walk-in freezers, deep freezers and on basement cold water pipes.

EASY TO APPLY

You don't need tools, brads or experience to apply NoDrip Tape. Just wrap it around pipes and press into place with your hands. Anybody can do it. Try a roll on a short section of pipe and compare with uncovered portion.

EFFECTIVE IMMEDIATELY

Follow the easy application directions on the package and you'll be surprised at results. You'll not be bothered with sweating and drip any more.

ORDER THROUGH YOUR SUPPLY HOUSE

Write for Interesting Circular

J. W. MORTELL CO.

Technical Coatings since 1895

533 Burch St.,

Kankakee, Ill.

Circle No. 49 on Reader Service Card

CONTRACTORS — Include NoDrip Tape protection in your estimates to stop drip, preserve pipes and fittings and also for good appearance. NoDrip is brown in color, but can be painted any color with cold water paint.

Roll covers about 10 ft. of 1/2" i.d. iron pipe or 13 ft. of 1/2" o.d. copper tubing.

\$1.69

Higher west of Rockland & Canada

MANUFACTURERS and SERVICE ENGINEERS

NoDrip Tape has been used for years on production lines of leading refrigeration equipment manufacturers. Investigate its many advantages.

is important when you consider that a trucker may have his refrigeration unit repaired in Detroit one month and, for instance, in New York City the next.

How can a contractor go about promoting business in the truck refrigeration field? There are many ways, but Heemstra has found that the great bulk of his new business has come from simple word-of-mouth advertising. Truckers are a notably clannish group, and in their conversation at wayside coffee stops or in transport terminals word of a satisfactory service operation gets around mighty fast. But, Heemstra warns, word of an unsatisfactory operation is spread just as fast!

Sources of Business

Heemstra also has obtained some new business through the lists of authorized service stations which are circulated through the trucking industry by the various manufacturers of truck refrigeration units, through contacts with the manufacturers of truck-trailer equipment, and through ads which he runs in two journals

published by state trucking associations. Membership in these associations also is very helpful.

Now that you know what a contractor needs in the way of facilities, personnel, training, and experience to successfully specialize in the field of truck refrigeration, you no doubt are wondering just what this field has to offer to the contractor in return. Heemstra is quick to enumerate these points, and here is a summation of what he has to say:

It's a good business, clean and non-competitive.

Basically it's a C.O.D. business, and that means that bookkeeping is minimized. After all, it doesn't make good sense to grant credit on a service business to a trucker who might be based a thousand miles away. Collection problems would be mighty tough if you did.

From the service standpoint, it's all inside work. There never is any need to send a man out on a job; the jobs always come to you. Because of the nature of the operation, there's seldom if ever any need for overtime or Sunday work. It may

be well from a promotional standpoint to offer 24-hour service, but with proper customer education you seldom need to provide it.

Best of all, it's a growing business with an extremely promising future.

Seasonal Nature Fading

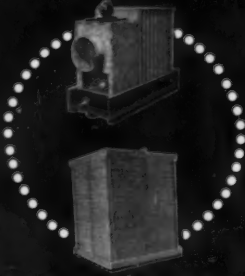
True, it has in the past tended to be somewhat seasonal, but an increasing trend to winter storage and service of truck refrigeration units (just like that offered by many service firms for room air conditioners) is helping to fill in the gaps. Another factor which is leveling out this business curve is the increasing use of reverse cycle equipment for defrosting low-temperature loads and for providing constant-temperature truck transport facilities in winter as well as summer.

This emphasis on insuring constant temperature operation regardless of weather conditions is proving to be one of the biggest factors in the industry's growth, for it opens up many new avenues of business to truck transport lines.

Some states, for instance, have

1ST

IN QUALITY CONSTRUCTION



LILIE-HOFFMANN

Cooling Towers, Inc.

4239 DUNCAN AVE., ST. LOUIS, MO.

Exclusive Builders of the World's
Finest Cooling Towers for 56 Years

Write for CS and CU Catalogs

FOUNDER MEMBER OF C.T.I.

GUARDING YOUR FINE REPUTATION

Circle No. 38 on Reader Service Card

Reliable Performance

Low cost centrifugal pumps with mechanical seals,
balanced bronze impellers, ball bearings.

1/4 to 1 1/2 H.P. Motors.

FOR AIR-CONDITIONING



LANCASTER

UNIT

PUMPS

TYPE M

FOR CIRCULATION JOBS



ALSO AVAILABLE

LANCASTER UNIT PUMPS

from 2-50 H.P. and heads to 300'
Capacities to 1000 G.P.M.

Write for Catalog

LANCASTER PUMP AND MANUFACTURING CO., Inc.

LANCASTER, PENNSYLVANIA

Circle No. 39 on Reader Service Card

new legalized the hauling of milk by refrigerated trucks, and in others legislation has been passed requiring constant temperatures in the transporting of certain types of baked goods.

Probably the biggest potential of all, however, lies in the industrial field, where this new assurance of constant temperature control by truckers make possible the hauling of acids, certain paints and varnishes, and many other types of products which must be held at critical temperatures in transit as well as in storage.

Yes, the opportunity certainly is there for the contractor who would like to build a business in the field of truck refrigeration. It's a chance to grow with a growing industry!

REMCO MAKING DRIERS, ACCUMULATORS FOR O.E.M.

Remco, Inc. of Zelienople, Pa. has entered the accumulator and accumulator-drier field with standard lines for original equipment manufacturers.

Both accumulators and accumulator-driers are made with spun-end copper shells, inverted openings for silver brazing being provided. The joints can be brazed with silver solder, silfos or fos copper with no additional cleaning needed before the manufacturer's brazing operation.

Remco's accumulator-driers incorporate the high efficiency molded Remcal drying element, nested in fibrous glass to provide cushioning against shock. A perforated retainer insures no shifting of the drying element in handling, and prevents fibrous glass or dessicant from entering the lines.

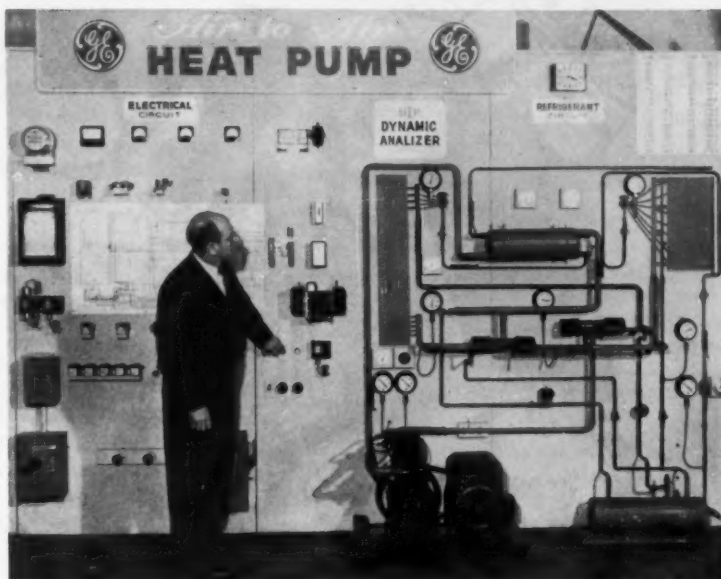
Net volumes of Remco accumulator-driers range from $5\frac{1}{8}$ through $36\frac{3}{4}$ cu. in. with moisture removal capacities at 80F or lower varying from 53 to 252 drops of water.

DRAYER-HANSON OPENS NEW YORK BRANCH

Drayer-Hanson, Inc. has established a regional branch office in the Architects Bldg., New York City, under the direction of Gene Koski, who has been appointed to head the operation.

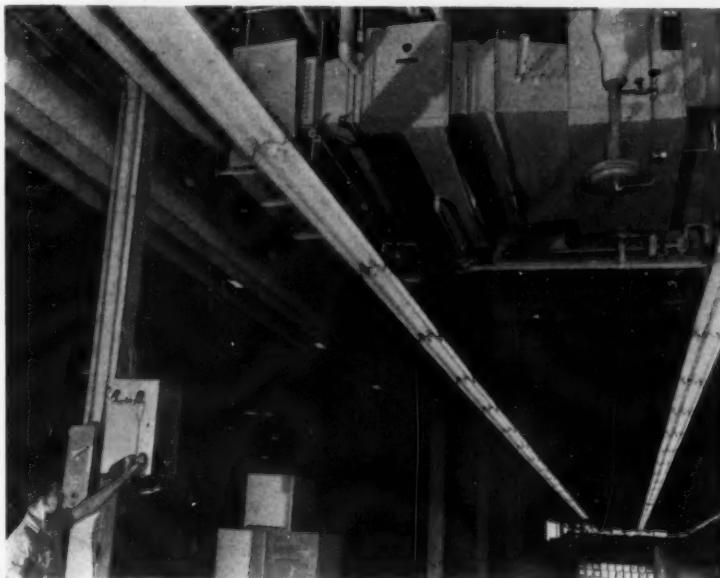
Pictures in the News

HEAT PUMP OPERATION ANALYZED BY DISPLAY



A SPECIAL BOARD, called a "Dynamic Analyzer" over which are spread the working parts of a great G-E heat pump in actual operation is used to demonstrate the performance characteristics of the new all-season air conditioner at the General Electric Heat Pump Institute. G. K. Marshall, manager of commercial engineering, is shown working the board.

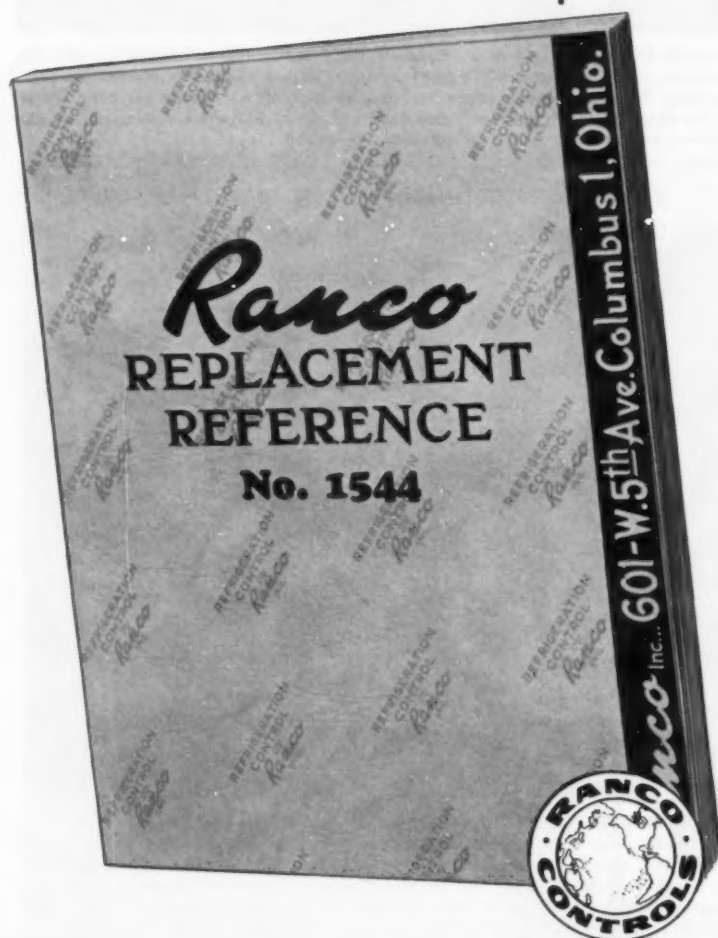
REMOTE SWITCH HELPS CLEAN REMOTE FILTERS



CLEANING ELECTROSTATIC FILTERS installed 20 feet above the floor has been made easy with the adoption of a remotely located switch which activates the cleaning mechanism. Trion air cleaners installed in the Mennen Co. plant near Morristown, N. J., were placed above the usual easy access distance, which necessitated development of the remote control device. The electric switch, mounted on a steel column within easy reach of maintenance personnel, is connected to a pneumatic valve located on the unit. This valve actuates the spray washing of the collecting plates.



BEST LINE IN TOWN!



Talk about a line! Ranco's Replacement Reference No. 1544 lists almost 5000 controls! It's the most complete line in the industry. You'll find in this one source an alphabetical listing of refrigeration manufacturers, trade names, and Ranco replacement part numbers. See this bigger, better, new manual at your Ranco wholesalers, or get a copy from him for your own use on the job and in your shop.

Ranco Inc.

COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS

Circle No. 51 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

THE SERVICE MAN'S DEPARTMENT

HERE'S HOW!

Watch Installation of Bubbler Guard in Field

Examination by the service department of General Electric Co. has shown that some water coolers returned for water leaks were unqualified returns. The leaks were caused by improper installation of the bubbler guard in the field.

Proper method for installation of the bubbler guard is:

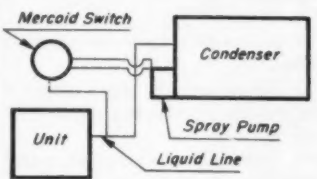
(1) Form the sealing compound around the bubbler valve so that no water can seep between the valve and the drain pan.

(2) Place the guard over the bubbler valve.

(3) Place the rubber gasket on the valve nozzle so that the gasket seats on the guard.

(4) Screw the bubbler nut on the nozzle so that the guard is held firmly in place and the rubber gasket is drawn tight to prevent leakage.

I DO IT THIS WAY



ON all outside condensers I install a Mercoid pressure switch on the liquid line and wire it to the spray pump on the condenser. In cool weather when the head pressure is low, the pump shuts off and when pressure is low the switch turns it on. This is very helpful in maintaining a constant head pressure.

Louis A. Novak
Pittsburgh, Pa.

Some Pointers on Proper Condensing Unit Location

Because the correct installation of refrigeration equipment is a primary factor affecting the operation and life of the equipment, too much emphasis cannot be placed on this phase of the service engineer's duties.

Of prime consideration in the installation of the condensing unit is the location.

It is obvious that good electrical service must be provided for units driven by electric motors. It is obvious also, that good water service be provided for water-cooled units.

The water supply and drain facilities must be adequate for the demands of the unit. The cooling water to be used must be free from scale or foreign substances which would tend to corrode or clog the water valve and the condenser.

It is often advisable to install a scale trap in the water line leading to the condenser. If the water pressure is over 75 p.s.i., it is also advisable to install a water pressure reducing valve in the line leading to the water valve, to insure correct operation.

Guard Against Entry Of Non-Condensables

That it is practically impossible to prevent air leaking through packing or seals into most refrigerating systems operating with below atmospheric suction pressure, is generally accepted. But what is not so commonly recognized are the many other ways non-condensables get into systems, even those operating at above atmospheric suction pressures.

Because of this indifferent recognition, many companies are losing

money. It pays to check your refrigerating system for non-condensables by comparing the actual con-



WANT TO EARN \$5?

Then dream up some good idea for saving yourself time, money, or aggravation on a service call, and tell us all about it. Just jot it down on the nearest scratch pad, together with a sketch if you think that would help, and send it to Here's How Editor, Commercial Refrigeration and Air Conditioning. If the Editor agrees that your idea is worthwhile, he'll make your dream come true by publishing it in the magazine and promptly sending you a check for \$5. Why not start reaching for that pencil now?

denser gage pressure with the theoretical pressure.

If condenser pressures are above theoretical, chances are 99 to 1 that non-condensables are the culprit, although occasionally fouled condenser tubes or other troubles may be the cause.

This means wasted money, because each 4 lbs. excess head pressure caused by non-condensables reduces compressor capacity by approximately 1% and increases power costs 2%.

Here are some of the ways non-condensables get into all systems, whether above or below atmospheric suction pressures.

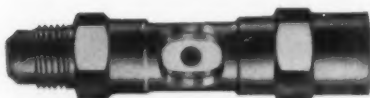
1. Breakdown of refrigerant or

Why Service Blindfolded?



■ Guessing about service work is the same as servicing blindfolded. It takes time and time costs you money.

■ Liquid Eye Indicators take the guesswork out of service by providing an immediate, accurate, refrigerant analysis check. Being *big* time savers, they substantially *increase your service income*. And, your customers will like them too because they can see when the equipment needs attention.



LIQUID EYE®

means:

- perfect refrigerant visibility.
- strate—thru flow.
- leak-proof—high safety factor.
- spring loaded gaskets.
- standard wrench flats.
- instant analysis of refrigerant condition.

Sold by leading Wholesalers. Send for the new Allin pocket-size booklet showing all Liquid Eye sizes and styles.



Allin MANUFACTURING COMPANY
1153 West Grand Ave., Chicago 22, Ill.

lubricating oil, which releases non-condensable gases.

2. System opened for repairs and inspection.
3. Impurities in the refrigerant.
4. Air drawn in when pumping down system.
5. Air drawn in when connecting or disconnecting hoses used for charging refrigerated trucks or cars.
6. Air drawn in when adding oil.

PITT-CORNING OPENS CANADIAN SALES OFFICE

Pittsburgh Corning Corp. has opened a branch sales office in Toronto, Ontario, Canada.

E. H. Martin, Jr., formerly manager of "Foamglas" low temperature insulation sales, has been appointed district manager for Pittsburgh Corning's Canadian sales operations.

CALIF. SERVICE FIRM JUNKS 13 DEATHTRAPS

One refrigeration service company is taking the matter of destroying abandoned refrigerator "deathtraps" into its own hands, according to information received from California Refrigerator Co., Los Angeles, Calif.

Doolin Refrigerator Service Co., Pittsburg, Calif., has made the Pittsburg city dump a graveyard for abandoned refrigerators by its campaign against such traps.

The campaign started as a result of a spot check which showed that 11 dangerous refrigerators were left abandoned in the Pittsburg area. In less than one week's time, 13 boxes had their doors removed and were junked in the city dump by Doolin Co.

The firm offered to go anywhere in the county to render refrigerators harmless, free of charge.

PLAY IT SAFE!

BEWARE OF CARBON-TET

By R. D. Hollingsworth
International Safety Director, RSES

THE health hazards in the use of carbon tetrachloride as a cleaning agent have been brought to the attention of refrigeration men numerous times over the past several years. However, since many service shops make a practice of rebuilding or repairing various pieces of used equipment in the shop during the winter months, and for the benefit of new men who may have entered the refrigeration field recently, it is advisable to repeat the dangers in the use of this solvent.

Carbon tetrachloride poisoning can occur from inhaling the vapor. In concentrations of over 50 parts per million it can be very dangerous. It is picked up by the blood stream and distributed to the various internal organs. Since "carbon-tet" is an excellent solvent for oils and greases it is only natural that it should attack the organs that contain the largest amount of fatty substance, namely the brain, liver and kidneys.

Carbon-tet also can be absorbed by the fats and oils in the skin if rubber gloves are not used. It is then picked up and distributed by the blood stream with the same results as if the vapors had been inhaled.

Eminent medical authorities have

stated that carbon-tet poisoning can effect damage to the liver, kidneys, adrenal glands, heart, skin, lungs, and digestive and nervous system; that the effects of exposure can be cumulative from one exposure to another until the point is reached where permanent damage to one or more of the above organs results; and that persons who seem the most susceptible to carbon-tet poisoning are alcoholics, fat people, undernourished persons, and those with peptic ulcers, liver, kidney or heart diseases.

To play it safe, follow these simple rules when using carbon-tet:

- (1) Use only in well ventilated areas. A well designed forced draft exhaust system should be installed over cleaning tanks. If you can smell carbon-tet in the room, the concentration is too great.
 - (2) Never leave open containers in a room.
 - (3) Never expose your skin to liquid carbon-tet. *Always use rubber gloves.*
 - (4) Never allow carbon-tet vapor to come in contact with an open flame, as phosgene, a very poisonous gas, is formed.
 - (5) If illness results from exposure, be sure to advise a physician so that proper treatment can be prescribed.
- It is much preferable to use other solvents for your cleaning requirements. There are a number of acceptable solvents on the market. Ask your refrigeration wholesaler to recommend a substitute.

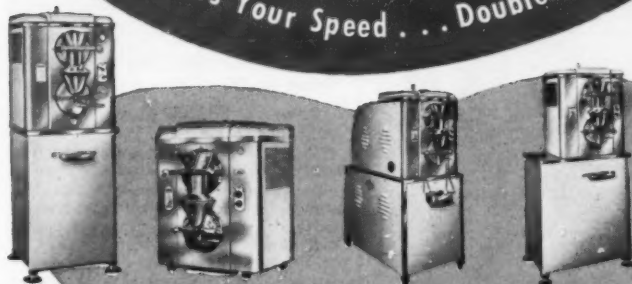


**TWO ...
are better
than one!**

FREEZ-KING



DOUBLE FEATURE
Doubles Your Speed ... Doubles Your Profits!



A FREEZ-KING MODEL FOR EVERY PURPOSE

AMERICA'S MOST COMPLETE LINE



MODEL 950

King size power. Two complete freezers in one stand. Each unit operates independently. Every portion perfect. Exclusive Freez-King features include patented automatic feed, seeing eye dial, automatic temperature control, patented back feed. Amazingly simple to operate.

OF CONTINUOUS SOFT ICE CREAM FREEZERS

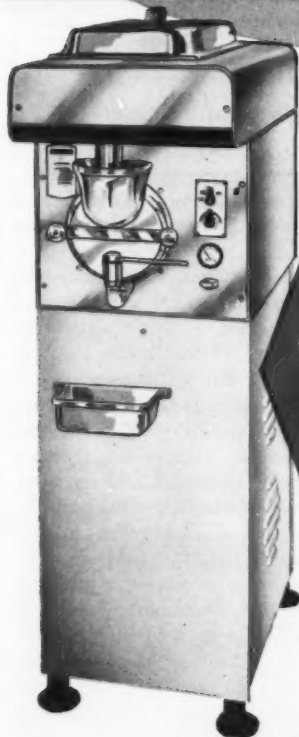
FREEZ-KING SHAKE DISPENSER

Draws Shakes Direct from Freezer at the Remarkable Speed of 360 an Hour!

**NEW
for
'54**

- Makes present methods old-fashioned.
- Saves time ... saves labor ... increases profits.
- Requires minimum floor space ... only 20 x 25 inches.
- Special Freez-King mix formula produces rich, thick, creamy shakes at astonishingly low cost.
- Attractive in design ... sturdy in construction ... efficient in operation.

The Freez-King Shake Dispenser is a boon to the fountain and drive-in trade.



DISTRIBUTORS: Exclusive franchises available. Write for details.
THE FREEZ-KING CORPORATION
2518 WEST MONTROSE AVE., DEPT. 40, CHICAGO 18, ILL.

Circle No. 65 on Reader Service Card

PORTABLE COOLING UNIT HOLDS CLOSE CONTROL

Originally designed for Army applications, a portable air-cooling unit which provides dependable service under variable field conditions has been developed by Reco Products Div., Refrigeration Engineering Corp. of New York City. This gasoline-driven unit makes use of a special reheat coil to control air temperatures within plus or minus 2 degrees. Tenney Engineering Inc. assisted in the design of the reheat and cooling coils.

The 26,500 Btu/hr. unit was originally designed for Army use in providing air cooling for small buildings and communications and utility vans containing electronic equipment. Such equipment gives off considerable quantities of heat, and a cooling system was necessary for personnel comfort.

The cooling unit is mounted on a two-wheeled trailer arranged for towing by another vehicle. It can be unbolted from the trailer and mounted on blocks or timbers if desired. Flexible ducts supplied with

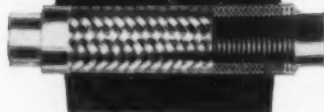
the unit connect cooling equipment with space to be cooled. Overall dimensions are 66" wide, 102" long, and 62" high. Total weight is 1960 lbs. A 4-cylinder, liquid-cooled, valve-in-head gasoline engine powers the unit.

To control the temperature of the air supplied to the conditioned space, the cooled air is circulated around a reheat coil before being delivered to the conditioned space. This reheat method of tempering the air temperature permits the engine to run continuously at a constant speed. If other modulation were employed, the engine would have to run intermittently or at variable

Here's the effective,
economical way
to isolate
compressor
vibration

FLEXON

Super-Service
VIBRA-SORBERS



VIBRA-SORBERS are available in bronze with copper tube ends in sizes from 1/2" through 4" I.D. Also available in steel in sizes from 5" through 12" I.D.

Write for descriptive literature giving full specifications and installation and application data on Flexon VIBRA-SORBERS. There is no obligation.

In refrigerating or air conditioning systems, you can keep the damaging effects of the vibration out of rigid piping with FLEXON VIBRA-SORBERS. These scientifically designed units have the proper amount of flexibility to harmlessly dissipate the vibration. Important, too, particularly in air conditioning systems, is the VIBRA-SORBER'S ability to isolate noise and prevent its transmission throughout a building.

Whenever you have a vibration problem, consider a VIBRA-SORBER first. They are economical, dependable and as easy to install as a section of pipe or tubing.

Flexonics

1321 S. THIRD AVENUE • MAYWOOD, ILLINOIS

FORMERLY CHICAGO METAL HOSE CORPORATION

Manufacturers of thermostats and flexible metal tubing. Plants at Maywood, Elgin, Rock Falls and Savanna, Ill. and Memphis, Tenn. In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

Flexon identifies products of Flexonics Corporation that have served industry for over 33 years



Circle No. 79 on Reader Service Card

BOOK REVIEW

Title: Refrigeration in America.
Author: Oscar E. Anderson, Jr.
Publisher: Princeton University Press, Princeton, N. J.
Price: \$6.00

A comprehensive history of the refrigeration industry in this country, the volume covers such aspects of the subject as the various uses of refrigeration, the main trends in technological progress, early resistance to application, social effects resulting from increasingly widespread use, and the relation of refrigeration to the national development.

Harvesting of natural ice in the early days, the invention and extension of mechanical refrigeration, problems of food supply, refrigerated transportation, cold storage, air conditioning, locker plants and home freezers, are some of the features discussed in this illustrated book.

speeds or the flow of refrigerant through the lines would have to be varied.

The reheat coil, adjacent to the cooling coil, is heated by the engine radiator water. A temperature regulated valve automatically controls the flow of hot water to the coil. When a temperature drop occurs within the conditioned area, gas contained in a capillary thermostatic bulb is cooled and its pressure is reduced. This reduced pressure causes a diaphragm in the thermostatic regulating valve to flex. A valve stem, connected to the diaphragm, lifts, opening the valve and increasing the amount of hot coolant flowing through the coil. If the air temperature rises, the valve closes and decreases the flow through the coil.

1 of the many reasons why you will find it pays to sell Chrysler Airtemp

Advanced Engineering which offers your prospects

**features
that DO
more!**

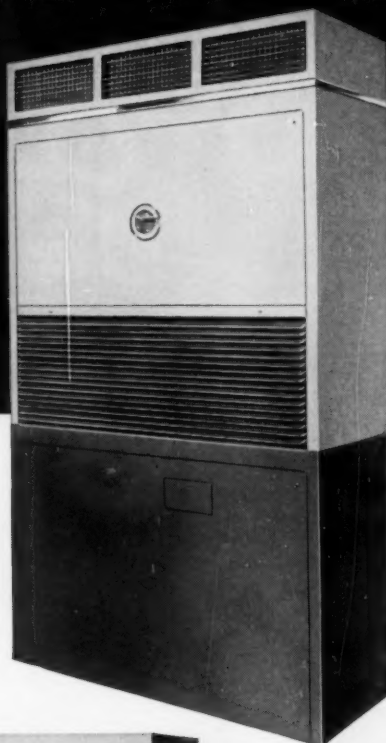
● The originator of "Packaged" Air Conditioning has always been steps ahead in engineering features which mean more to the prospect because they *do more* for him. The famous Chrysler Airtemp radial-design compressor operates more efficiently and more quietly. "Maxi-Fin" Coil steps up cooling efficiency. "Airfoil" Grille provides a greater range of adjustments of the air flow pattern. And so, right down the line, every one of the many exclusive features of a Chrysler Airtemp "Packaged" Air Conditioner conveys a definite benefit to the buyer. There are more reasons, too, why you will find that it pays to sell Chrysler Airtemp—the "Packaged" Air Conditioning which most people buy (according to the 17-year sales record). Take a minute now to check those reasons stated below. Then fill out and mail the convenient coupon for complete details of your opportunity to make more money with Chrysler Airtemp—the first name in "Packaged" Air Conditioning.

7 more advantages you sell with
when you sell Chrysler Airtemp...

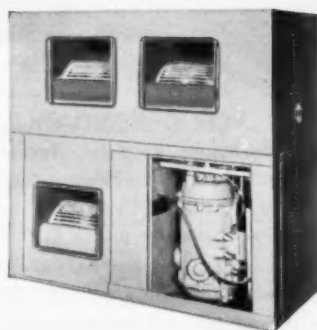
- ★ **Consumer Confidence**—people know the Chrysler Airtemp name—associate it with engineering leadership—have confidence in the products which carry it.
- ★ **More Units in Use**—Chrysler Airtemp pioneered "Packaged" Air Conditioning in 1937, has more units in use today than any other manufacturer.
- ★ **Lower Installation Cost**—super-quiet operation permits use within or very close to areas to be cooled, reducing amount of ductwork required. All units shipped completely factory-assembled and tested.
- ★ **Assured Dependability**—all units manufactured to exacting standards of precision

in a windowless, completely air conditioned factory. Each unit is thoroughly inspected and tested, using special equipment and methods, to assure dependable performance in the field.

- ★ **More Complete Line**—9 models meet all requirements.
- ★ **More National Advertising** to all prospects and specific benefit advertising to individual businesses—the best markets for "Packaged" Air Conditioning.
- ★ **More Local Selling Help**—the broadest line of tested and proved local selling helps for dealers.



"Packaged" Air Conditioners in six water-cooled models from 2 to 15 H.P.



New "Packaged" Air-Cooled Air Conditioners—no water needed, no plumbing required. 2, 3 and 5 H.P.



CHRYSLER AIRTEMP

heating • air conditioning for homes, business, industry

Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

Airtemp Division of Chrysler Corporation
P.O. Box 1037, Dayton 1, Ohio

CR & AC-2-54

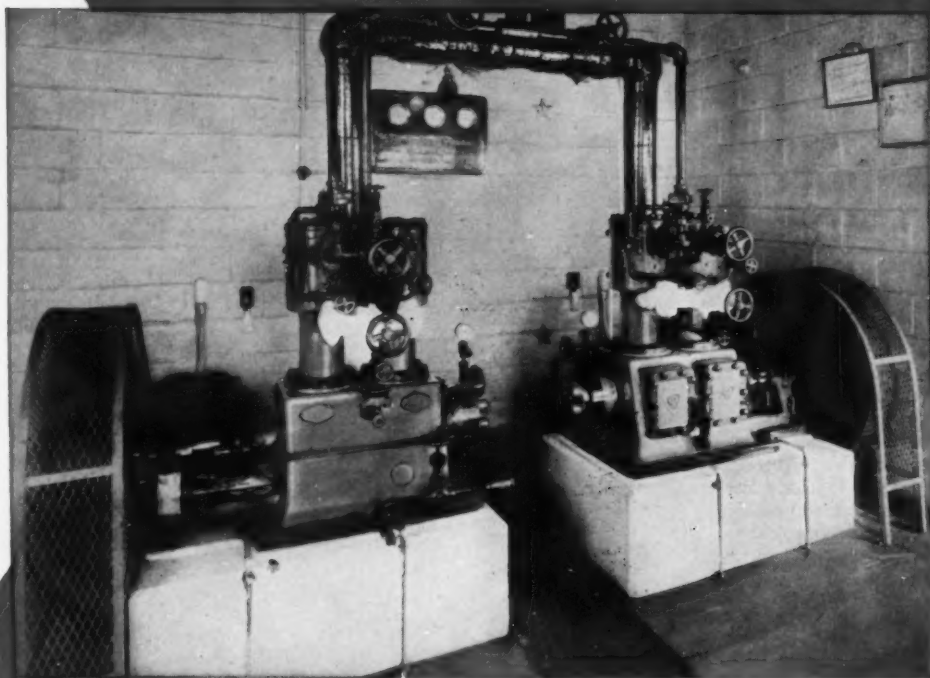
I would like to know more about the Chrysler Airtemp Franchise.

Name _____

Address _____

City _____ Zone _____ State _____

Use the **WAXFREE** Oil



FOR DEPENDABLE, trouble-free performance, keep compressor systems free from wax. Use *Texaco Capella Oil (Waxfree)* — the oil that *won't wax out in systems even down to minus 100° F.*

The outstandingly low haze and floc temperatures of *Texaco Capella Oil (Waxfree)*, its great stability and resistance to oxidation, assure clean, smooth compressor operation. In addition, *Texaco Capella Oil (Waxfree)* is non-foaming, moisture-free and compatible with all types of refrigerants.

There is a complete line of *Texaco Capella*

Oils (Waxfree) to meet all compressor and operating requirements. You can get them in 55-gallon and 5-gallon drums, 1-gallon cans, and the more widely used grades in 1-quart containers — all *refinery-sealed* to protect purity and quality.

A Texaco Lubrication Engineer will gladly help you select the right one. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

☆ ☆ ☆

The Texas Company, 135 East 42nd Street, New York 17, N. Y.



TEXACO Capella Oils (Waxfree)

FOR ALL REFRIGERATING AND AIR CONDITIONING COMPRESSORS

TUNE IN . . . METROPOLITAN OPERA radio broadcasts every Saturday afternoon. See newspaper for time and station.

Circle No. 55 on Reader Service Card

FEBRUARY, 1954 • COMMERCIAL REFRIGERATION

Lawler Analyzes Possible Solutions to Increasing Water Shortage Problem

WITH a demand for 75,000 to 95,000 residential cooling systems predicted for 1954, the problem of solving water shortages may become increasingly acute, claims Matthew M. Lawler, vice president of Worthington Corp.'s air conditioning and refrigeration division.

Lawler feels that within the next few years, if the prolonged seasonal dry spells continue in so many parts of the country, many municipalities may have to follow the lead of New York, Miami Beach, Jacksonville, Wichita, and other communities, in severely restricting the use of water for air conditioning consumption.

"Water Department officials have two varying opinions on the subject," says Lawler. "One group maintains it is their job to provide adequate facilities to meet the demand while the other group advocates the conservation of water as a valuable natural resource. Both

groups are correct, depending upon their location and the availability of limitless water supplies."

When the home owner or a commercial establishment is faced with severe restrictions on the supply of water, then the problem becomes manifold. It necessitates a cooperative effort toward solution.

According to Lawler, the air conditioning manufacturers are now working toward less expensive water conservation devices. Meantime, users of water consuming air conditioners do have available to them a variety of solutions to their water shortage problem.

There are four methods available at the present time which will satisfy most water-conservation ordinances today, Lawler reports, and at the same time affect a substantial saving in water costs. Each method has advantages and disadvantages, he explains, as summarized in the following paragraphs:

Air Cooled Condenser — For residential use, the air cooled condenser is the best solution to the problem. It is practicable for air conditioners up to 5 hp and involves only one heat transfer. The equipment can be mounted next to an outside wall where proper intake and exhaust openings can be provided.

In the residence utilizing the central utility room, an attractively designed miniature penthouse or bubble on top of the building could provide air intake and exhaust for an air cooled condenser intentionally located high in the manufacturer's year-round heating-cooling package.

The disadvantages of this method (which in most cases will be offset by the advantages) are that air must be ducted in and out, a suit-

able location must be found next to an outside wall, and the fan noise may be objectionable to some users.

Fan Coil Unit — This is a water cooling unit which may be located wherever desired, except that it should be accessible for servicing. No makeup water connection is needed.

The contents of the water system can be given an initial treatment to inhibit corrosion and prevent freezing. In-frequent lubrication of the fan, pump, and motor, and cleaning of the coil faces are necessary.

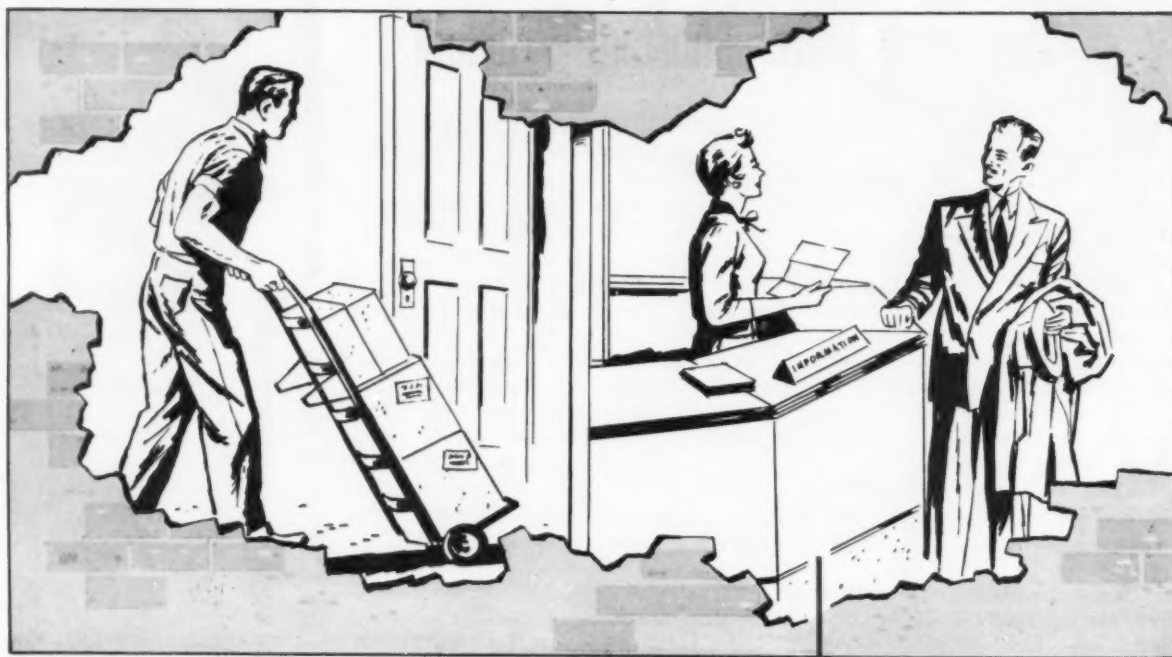
The efficiency of this method is slightly less than for air cooled condenser method.

Cooling Tower — The need for water saving devices in regions such as the southwest has been met by local lumber companies who sell

NEWS • ACTIVITIES • PLANS

CONTRACTORS

Continuous Comfort...



the construction and maintenance of

*comfortable
customers*

Satisfied customers are built on a basis of Air Conditioning installations that stand up to any service—continually deliver comfort day-after-day, year-in and -out—without need for repeated requests for "service".

And the only way to make that kind of installation, hence, the only way to build good customer relations, is to start with system components that deliver the goods under any conditions—without failure or need for excess maintenance and service.

When it comes to Motorpumps, there's one selection you can make that will do just that—regardless of size, type, or conditions of installation.

Ingersoll-Rand Motorpumps for Air Conditioning service are designed from experience, built to peak quality standards, proved in thousands of applications to give extra-long life with minimum trouble. They are built to last the life of the system. Get more information about I-R Motorpumps for Air Conditioning service right now. Ask for Form 7177 when you write:

Ingersoll-Rand

11 Broadway, New York 4, N. Y.

with a guarantee that

*starts
right
here*



**Ingersoll-Rand motorpumps
on air-conditioning service
give you extra advantages
for better, easier
installation**

● **Long, Trouble-Free Life:**

Put in these rugged pumps and forget them. Their ability to stand up to severe operating conditions is assured.

● **Easy Installation:**

Bolt them to whatever's handy — walls, floors, other equipment—no baseplates or couplings required. They operate at top efficiency in any position.

● **Maximum Efficiency:**

Exclusive design features give you pumps that win size-for-size comparisons with any other pumps in air conditioning service.

● **Space Saving:**

The compactness of I-R pumps ends "fitting-in" headaches in any size installation.

● **Low First Cost:**

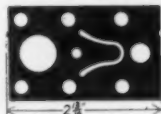
The high efficiency of I-R Motorpumps often lets you use a smaller unit for the job.

MOTOR PUMP

for **AIR CONDITIONING** service

Circle No. 56 on Reader Service Card
and **AIR CONDITIONING** • **FEBRUARY, 1954**

ANNOUNCING New Additions To The WATSCO HERMETIC FLAPPER FAMILY



PART No. F-23
Suction Flapper
For Westinghouse



PART No. F-24
Discharge Flapper
For Westinghouse

PART No. F-1 Flapper For Westinghouse	PART No. F-2 Suction Flapper For Stewart Warner, Philco - Chieftain Tecumseh
PART No. F-3 Discharge Flapper For Stewart Warner, Philco - Chieftain Tecumseh	PART No. F-4 Discharge Flapper For General Electric DR-1 and DR-2
PART No. F-5 Discharge Flapper For Norge Sealed Units	PART No. F-6 Discharge Flapper For Norge Ballator
PART No. F-7 Flapper For Frigidaire Sealed Units to and including 1937	PART No. F-8 Frigidaire Flapper for Sealed Units 1938 and Later
PART No. F-9 Suction Flapper For Crosley	PART No. F-10 Discharge Flapper For Crosley
PART No. F-11 Suction Flapper For Westinghouse (Late Models)	
PART No. F-12 Discharge Flapper For Westinghouse (Late Models)	
PART No. F-13 Discharge Flapper For Sealed Coldspot	PART No. F-14 Flapper Retainer For Frigidaire Units to and including 1937
PART No. F-15 Suction Flapper For Sealed Kelvinator	PART No. F-16 Discharge Flapper For Sealed Kelvinator
PART No. F-17 Suction Flapper For Sealed General Electric	
PART No. F-18 Discharge Flapper For Sealed General Electric	PART No. F-19 Flapper For Westinghouse Sealed Unit
PART No. F-20 Flapper Retainer For F-8 Flapper	PART No. F-21 Flapper Valve For Gibson Unit
	PART No. F-22 Suction And Discharge Flapper For Tecumseh Units

Ask Your Jobber For Our **FREE CATALOG**
NO. 17, Featuring Our Complete Line

Available at Your Jobber



Wagner Tool & Supply Corp.,

REFRIGERATION PARTS AND TOOLS

40-08 22nd ST., L. I. City, N. Y.

kits of the redwood parts necessary to construct such a tower. The builder installs a pump and pipes water from the water tower sump to the water cooled condenser of the air conditioner, and thence to the nozzles at the top of the tower.

There are two types of cooling towers: natural draft and mechanical draft.

Mechanical draft cooling towers involve the use of a fan, and fan noise must be considered in selecting its location. Consideration of accessibility for service must also be given when selecting location, as it is necessary to lubricate the fan, pump, and motor bearings, prevent stoppage of water filters and spray nozzles by dirt and leaves, provide regular water treatment to prevent corrosion, and shut down and drain the tower in winter to prevent freezing.

Evaporative Condensers — Although the evaporative condenser is more efficient than the other methods listed, it is less desirable for residential applications because it combines the disadvantages of all.

The disadvantage of remote location, making impossible the factory assembled package, may of course be overcome by building the evaporative condenser into the residential unit as has been done in some packaged units on the market, and arranging to duct outdoor air to and from the unit. When this is finally accomplished, one has only the advantage over the air cooled condenser method of a little better refrigeration system efficiency.

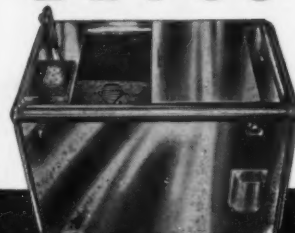
The disadvantages of maintenance of a water treatment facility, water filter and nozzle cleaning, winter draining and spring refilling operations remain. In the larger units for commercial establishments, however, these disadvantages become less important to the greater advantages of increased refrigeration efficiency.

BINKS APPOINTS WHITE AS OHIO REPRESENTATIVE

Binks Mfg. Co. of Chicago has appointed White Sales Associates, Cincinnati, Ohio, representatives for Binks' line of forced and natural draft cooling towers in the Cincinnati territory.

Circle No. 58 on Reader Service Card

BEVCO



**QUALITY COOLERS YOU
CAN FIT INTO YOUR LINE
AND SELL AT A PROFIT**

ACCESSORIES



**SINGLE
WATER
FAUCET**



**GRILL
DIVIDERS**



**DOUBLE
FAUCET**



**MOUTH
BUBBLER**



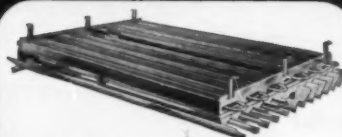
**HEAVY
DUTY
CASTERS**

You sell quality, trouble-free cooling in these electric units that operate wet or dry. In 3 sizes... 4, 5, 6 ft. Unobstructed interiors. Baked Enamel finish for beauty and sanitation.

SEND FOR CATALOG #1

The BEVCO Company, Inc.
3316-28 S. BROADWAY • ST. LOUIS 18, MO.

Buy Peerless FOR PERFORMANCE



Flash Coolers Fin Coils Flash Pans

The Peerless Line of quality products is designed and constructed to meet every demand of modern commercial refrigeration. Our Flash Coolers, Fin Coils and Flash Cooler Pans have proved their superiority in performance under widely varying operating conditions. They are built with an eye to appearance, economy of space, and the utmost convenience in installation and servicing. Louvers fabricated from polished aluminum. Made in a wide variety of standardized sizes and styles—all of unchallenged Peerless quality. Write for Bulletin 49G today.

Peerless of America, Inc.

1501 No. Magnolia, Avenue
Chicago 22, Illinois, U.S.A.

Circle No. 59 on Reader Service Card

Circle No. 57 on Reader Service Card

COMMITTEE CHAIRMEN APPOINTED BY HOWE

George Howe, re-elected president of the Refrigeration and Air Conditioning Contractors Association for the current year, has appointed the following committee chairmen for 1954:

Codes for licensing, H. J. Prebensen, Chicago, Ill.; finance, Ralph Manns, Wilmington, Calif.; grievance, Ralph W. Lampie, Richmond, Va.; labor relations, Warren W. Farr, Cleveland, Ohio; legal, Henry B. Ely, Los Angeles, Calif.; membership, Charles C. E. Harris, Cambridge, Mass.; publicity, W. J. Schemers, Detroit, Mich.; trade relations, Walter McCarty, Chicago, Ill.; inter-association activity, A. M. Palen, St. Paul, Minn.

RACCA PLANS REGIONAL CONVENTION IN CALIF.

The Refrigeration and Air Conditioning Contractors Association is planning a regional convention for their West Coast membership which will be held in conjunction with the A.R.I. Educational Conference being held in the Long Beach, Calif., Municipal Auditorium on March 11, 12 and 13, 1954, according to Ray Kromer, executive vice president.

Henry Ely, secretary of the Los Angeles Chapter has been appointed Chairman of this regional meeting and will work closely with Kromer in developing the convention program. An interesting and informative convention is being arranged for all members and prospective members of the Association on the West Coast.

NATIONAL RACCA OFFICE OPENED IN CLEVELAND

A national office of the Refrigeration and Air Conditioning Contractors Association has been opened in Cleveland, Ohio, according to Wm. H. Schemers, publicity chairman, and this office will serve as the operating headquarters of Ray Kromer, full-time executive vice president of the association.

Address of the new Cleveland office is Room 2108 Keith Bldg., 1621 Euclid Ave., Cleveland 15.

The business office of RACCA, Schemers states, will remain in Chi-

cago, Ill., at 228 N. LaSalle St.

In his capacity as executive vice president, Kromer has announced his intention of promoting widespread local association affiliation with the national organization, rather than direct membership.

All programs, development, news letter, promotion, and inter-association and industry relations will be handled through his office under the direction of RACCA's national officers and committee chairman. Kromer also will be available for consultation to alleviate local and individual contractor problems.

RACCA OFFERS SPEAKER SERVICE TO LOCAL GROUPS

Formation of a "speakers' bureau" to make available qualified program material for regular and special meetings of local contractor organizations has been announced by W. H. Schemers, of Detroit, Mich., chairman of the publicity committee of the Refrigeration and Air Conditioning Contractors Association.

Ray Kromer, RACCA's executive vice president, in cooperation with George Mills of the Air-Conditioning and Refrigeration Institute, has



Mechanics look to **BONNEY** for REFRIGERATION TOOLS



It's mechanic preference

that makes Bonney the leader in the refrigeration field. Mechanics know they can depend on Bonney for tools that help them do a better job of refrigeration servicing—faster.

These three tools are recent examples of how Bonney builds its line to meet *your* needs:

BONNEY P319 FORKED-WEDGE SEPARATOR

Makes quick work of removing pulleys. Especially useful in places where limited space makes the use of a screw-type puller impossible. The Forked-Wedge Separator is inserted between the pulley hub and the compressor or motor housing after the set screw has been removed. A few taps on the end of the separator brings the pulley off the shaft.



BONNEY 1252 SPORLAN EXPANSION VALVE WRENCH

This thin open-end wrench has a 1 5/8" opening. The 30° head makes it easy to remove the power element from the body of Sporlan expansion valves.

BONNEY RF-7 VALVE STEM SOCKET

This 1/4" male drive socket with 3/8" square opening is especially designed for use on Frigidaire valves.

Bonney makes a complete line of tools designed to meet the needs of the refrigeration mechanic and service man.

BONNEY FORGE & TOOL WORKS • ALLENTOWN, PA.

Circle No. 60 on Reader Service Card





DEPENDABLE REFRIGERATION SINCE 1882
Frick Co.
 WAYNESBORO, PENNA. U.S.A.

**DON'T STOP SELLING AFTER
 YOU'VE SOLD REFRIGERATION**



- Installed by one man... without tools... in a matter of minutes
- They're super strong and super beautiful
- They'll help you sell the whole job and HIRSHLOK means more profit for you.

WRITE NOW!
 GET THE WHOLE
 HIRSHLOK SHELVING
 STORY...
 Just clip this ad to
 your letterhead and
 mail to:

S. A. HIRSH MFG. COMPANY

8051 Central Park Avenue, SKOKIE, ILLINOIS
 Dept. C, Chicago Phone: Cornelia 7-4140

Circle No. 63 on Reader Service Card

(Advertisement)



SUPER MARKET EXPANDS USE OF CORKBOARD INSULATION

After its experience with the effectiveness of corkboard for the insulation of low-temperature spaces, Albany Public Markets, Inc., made two additional installations—one in 1951, the other in 1952. No maintenance work of any kind has been required on these installations since the erection jobs were completed by United Cork Companies' erectors.

Engineering design of the installations was worked out by the Albany branch office of United Cork Companies in cooperation with Albany Public Markets, Inc. Architect for the building was Edward J. Toole.

Advantages of United Cork Service

The availability of complete engineering and erection service from nearby branch offices is one of the major reasons why thousands of operators of refrigerated spaces have selected United Cork Companies' BB (Block-Baked) Corkboard as their own low-temperature insulation. Engineering staffs and erection crews are prepared to handle the entire insulation job, and to work in close cooperation with owners, architects and refrigeration contractors.

This nationwide service, which includes a thorough check on the actual performance of the installation, assures customers of the most effective use of the inherent advantages of corkboard insulation.

The type of corkboard produced by United Cork Companies is also of major importance in the effectiveness of insulation jobs. Carefully selected grades of cork are formed into corkboard by United Cork's patented process of block-baking (BB).

Thus United Cork Companies offers a completely integrated responsibility covering every step of the insulation job—from selection of raw materials, through manufacturing, engineering design, and erection of the insulation, to checking of performance.

For more information about the scope of United Cork Companies' service—and about the effectiveness of installations in the toughest service—just drop a line to United Cork Companies, Dept. (I-8), Kearney, New Jersey.

Circle No. 61 on Reader Service Card

enlisted the aid of more than 100 expert speakers from manufacturers to discuss the many and varied phases of the problems which face contractors in their day-to-day activities.

A roster of these speakers has been made available to the local groups. Local associations from coast to coast have been divided into four geographical zones, and the region in which each speaker will be available is indicated in the roster.

The well-balanced list of subjects covered by these speakers includes such important topics as sales, sales promotion, technical information, marketing controls, application and equipment design, installation and service, filters and driers, evaporative condensers, refrigerants, liquid cooling, components, testing, commercial and industrial air conditioning, residential air conditioning, automotive air conditioning, sales management, business methods, and hiring and training of personnel.

MEETING WITH AUTO GROUPS IS PROPOSED

The National Automobile Dealers Association and the Automobile Manufacturers Association have been invited to select a committee to meet with a committee from the Refrigeration and Air Conditioning Contractors Association to discuss the establishment of stations for servicing and installing automobile air conditioning in the field by qualified mechanics.

Announcement of this invitation has been made by Ray Kromer, executive vice president of RACCA. The invitation, Kromer points out, establishes the readiness of the refrigeration contractors, and the local associations to which they belong, to follow through in their responsibility under the resolution formulated last October by top officials of RACCA and the United Association (AFL).

NAMED MARLO AGENT

Marlo Coil Co., St. Louis, has appointed Gilbert Engineering Co., Dallas, as Marlo representative in the northeast Texas area.

PORTABLE RECORDER OF TEMPERATURE & HUMIDITY

... easy to carry as a camera
... graphs combined on one chart
... professional accuracy

Here's a portable precise recording instrument... of special value in connection with selling, installing, testing and servicing air conditioning equipment.

It's compact. Rugged. Convenient. It records on one graph... temperature and relative humidity. The recorder is spring driven. The charts record vertically, downward with the pen tracing from bottom to the top of the charts.

The graphs are convenient file sizes (3" x 5"). The instrument records for 10 or 30 hours.

Elsewhere in this notice we give you the technical details.



CLOSED:

The humidity sensitive element is a specially treated assembly of multiple human hair strands, so arranged in a leverage system that relative humidity is recorded directly on the chart in percent. No wet bulbs, wicks or recourse to psychrometric tables are required. The

temperature sensitive element is a strip of thermostatic bimetal with a leverage system similar to that for humidity recording. The timing mechanism is a spring wound chart drive specially selected for this particular instrument.

OPEN:

The open view of the Recorder illustrates the unique, vertical movement of the chart platen, the automatic means for setting the pens against the chart when the door is closed, and the compact, efficient design of the instrument. The accuracy of recording possible to obtain with this instrument is only limited by the readability of the chart, and the rugged construction insures long life and trouble-free operation in the kind of service for which it is designed.



FRIEZ INSTRUMENT

Division of Bendix Aviation Corporation
1410 Taylor Ave. Baltimore 4, Md.

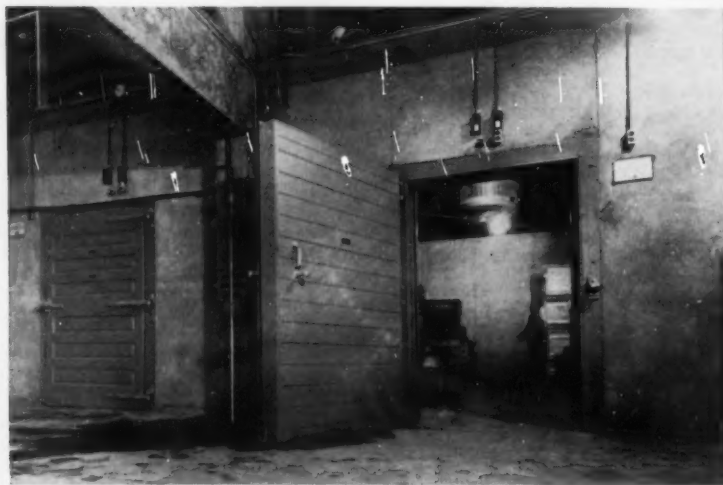
Export Offices

BENDIX INTERNATIONAL DIVISION
205 E. 42nd St. New York 17, N.Y., U.S.A.

Market Installation Used Wide Variety of Equipment



A CARLOAD OF BANANAS can be stored in this banana storage room, one of four such rooms operated in the St. Louis produce market by M. Rizzo & Co. Maintenance of proper temperatures for ripening purposes is obtained in each room by the installation of Kramer Trenton cooling coils.



MINUS 10 DEGREES freezer room operated by Raith Produce Co. in the new St. Louis produce market is cooled by a Kramer Trenton radial unit. The room, 60 x 13', contains 8,100 cu. ft. of storage space, and is able to maintain constant sub-zero temperatures without interruption for manual defrosting.

* * *

A new and ultra-modern produce market has been opened in St. Louis by St. Louis Market, Inc. In the new market, which replaces the old dilapidated and traffic-snarling set-up, 25 of the 28 wholesalers requiring refrigeration had equipment manufactured by Kramer Trenton Co. installed for their needs.

A total of 73 Kramer units were installed in the new market by R & R

Equipment Co. and Thermal Engineering Co., both of St. Louis. They installed Kramer cooling coils and Thermobank automatic hot gas defrosting units. The R & R Equipment Co. utilized 44 large cooling coils when it installed refrigeration rooms for 18 wholesalers. One of these concerns also used the Thermobank system in its giant frozen food storage room.

Thermal Engineering Co. set up all of the market's banana room installations, all of which are equipped with cooling coils in use with 5-hp compressors. In all, 29 cooling coils were installed in banana rooms operated by equipment negotiated through Authorized Refrigeration Parts Co. of St. Louis. Purchase of Kramer equipment used by R & R was negotiated through the N. O. Nelson Co., also of St. Louis.

Two Systems Used

One wholesaler, the Raith Produce Co., makes use of a 60 by 13' Armstrong -10° F freezer room installed by R & R, to distribute frozen fruits and vegetables. This room, with 8,100 cu. ft. of storage space, uses two Freon systems with two 7½-hp compressors. Four large cooling coils are mounted on the ceiling. This system is capable of maintaining constant sub-zero temperatures without interruption for manual defrosting. The Raith installation is equipped with a complete 200 amp, three-phase electrical power installation, including a special panel board and wiring service.

Heating Needed, Too

A typical banana room installation was set up by Thermal Engineering for M. Rizzo & Co. This wholesaler's four rooms, built to accommodate a carload of bananas each, measure 15' wide, 25' long and 8½' high. Each room is cooled by a large cooling coil. Two 5-hp compressors are used for the four rooms, and a single evaporative condenser cools the entire system. All banana rooms are designed to reproduce perfect ripening and storage conditions. Through use of sprinklers, 100% humidity can be constantly maintained. Heating and cooling units are used alternately to accelerate or delay the ripening period.

The temperature of each banana room is controlled by a thermostat operating a solenoid valve in the liquid line to the cooling units. The compressors are controlled by high and low pressure control. Each set of two compressors is interconnected with each evaporative condenser and the compressors are step controlled. The evaporative condensers on the banana rooms are mounted indoors with modulating air dampers.

a quick
source of
exceptionally

***dependable**



**air
conditioning
and
refrigeration
pumps**

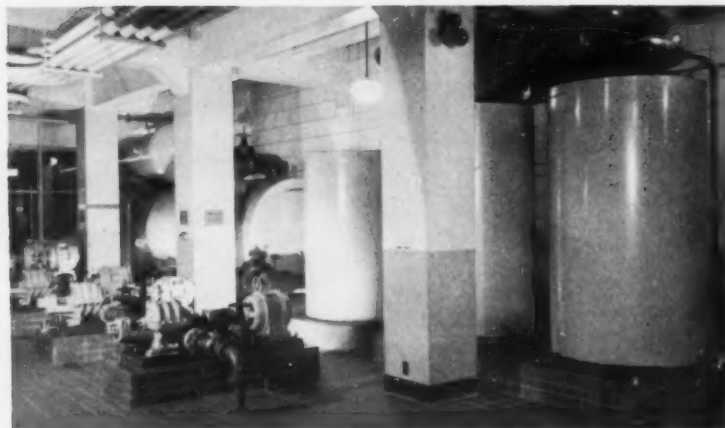
Marlow offers a wide range of pumps designed expressly for circulating water through cooling towers and evaporative coolers. These quiet and compact pumps are immediately available from 3 convenient factory stocks at De Queen, Arkansas (near Texarkana), Ridgewood, New Jersey, and Chicago, Illinois.

Many *Unusual Construction Features are built into these pumps. They are *non-overloading*. Impellers are **LOCKED ON** and will not loosen even if accidentally started in reverse. A *stainless steel shaft* prevents corrosion, base is made of *unbreakable* wrought steel and operation is exceptionally quiet. Over a quarter of a century of specialized pump experience insures peak performance and completely dependable operation. Write for full details.

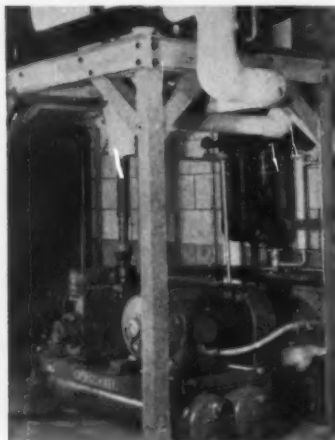
WORLD'S LARGEST MANUFACTURER OF SELF-PRIMING CENTRIFUGAL PUMPS

MARLOW PUMPS • RIDGEWOOD, N. J.
Branch Plant • De Queen, Arkansas

Modern Equipment Gives New Life to Old Building



OUT WITH THE OLD was the order of the day at the headquarters of Cincinnati & Suburban Bell Telephone Co. as this old ammonia equipment was replaced by a modern direct expansion system.



IN WITH THE NEW meant the installation of this 10-hp water cooled compressor and water storage tank in the space formerly occupied by the two large brine storage tanks shown at the right in the top photo.

A good example of how modern equipment can do the same refrigeration job more economically, with less horsepower and floor space, is illustrated in the recent installation in the 12-story building which houses the "nerve center" of the Cincinnati and Suburban Bell Telephone Co. of Cincinnati, Ohio.

The building was constructed in 1930, covering half of a downtown city block. Harry Hake and Harry Hake, Jr., architects, designed the building and specified the original

ammonia refrigerating system. A part of this equipment consisted of two large compressors, one a 30-hp. unit for summer use and the other a 15-hp. unit for winter operation located in the sub-basement. It was used to cool a circulating water system with 64 individual drinking fountains, and food keeping equipment in a sixth floor cafeteria, consisting of three walk-in coolers, two salad cold-plates and refrigerated storage cabinets, and an ice cream cabinet.

After a number of years of operation the brine piping between the sub-basement and the sixth floor developed leaks. The cost of repairing or replacing this piping would have been excessive, so it was decided to get new and different equipment.

The old equipment was removed from the sub-basement and various sections of the building. All of the ammonia refrigerating equipment was removed from the 30 x 30' compressor room in the sub-basement. In the main machine room, a large brine storage tank, two huge water storage tanks and two 3-hp. brine pumps were cleared out.

The new equipment installed was a Frigidaire 10-hp. water cooled reciprocating compressor to provide refrigeration for the circulating drinking water system. In addition, a 100 gal. water storage tank was

installed above the compressor. This left the old compressor room completely empty for extra storage space, and the big machine room with more space for inspection and maintenance purposes.

The new equipment installed in the sixth floor cafeteria consists of one 1/2-hp. "Meter-Miser" rotary compressor, plus a 3/4-hp. combination air and water cooled reciprocating compressor, providing refrigeration for two salad cold plates and refrigerated storage cabinets, plus an ice cream cabinet; a 3/4-hp. combination compressor installed in conjunction with a big 12-door reach-through bakery and salad refrigerator; a 1 1/2-hp. combination reciprocating compressor provides refrigeration for three walk-in coolers.

The complete Frigidaire installation totals 13 1/2 horsepower and takes considerably less floor space than the old equipment, which totaled 30 horsepower for summer use.

To handle the increased traffic in the cafeteria, a Frigidaire twenty-two case dry beverage cooler and a 6-hole double-row ice cream cabinet for the storage of ice cream and frozen foods were also installed.

10-TON UNIT AIDS TOKYO PHARMACEUTICAL FIRM

Installation of a 10-ton upright self-contained air conditioner in the Yamanouchi Pharmaceutical Co. of Tokyo, has considerably aided the manufacture of chemical filled ampules.

The air conditioning unit, made by United States Air Conditioning Corp., controls the temperature, humidity and dust in a room utilized for sterilized ampule filling. The unit is used in conjunction with "Electro-Matic" air filters made by American Air Filter Co., Inc. Shinwa Trading Co., Inc., Tokyo representative for Usairco and American Air Filter, made the installation.

NEW TRANE SALES OFFICE

Trane Co. has announced the new location of its Oklahoma City, Okla. sales office at 819 North Virginia St. E. M. Jameson is sales engineer in charge of the office.

OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted, \$4.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢ boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢.

BUSINESS OPPORTUNITIES

FOR SALE—Well established year round refrigeration business, at inventory, in a fast growing section of Florida. Will take some capital to handle and will consider terms to right party for balance. Reason for selling: Other interest and am unable to handle both. Box 2154 COMMERCIAL REFRIGERATION & AIR CONDITIONING.

POSITIONS AVAILABLE

FACTORY REPRESENTATIVES: Major manufacturer of complete line of ceiling suspended coils, and evaporative condensers has openings in several areas for factory representatives. Submit resume of personal and business qualifications to Box 2254 COMMERCIAL REFRIGERATION & AIR CONDITIONING.

SEEKING PARTNER—to establish and manage enterprise for selling, installing and servicing air conditioning, heating and irrigation equipment. Applicant must have engineering degree and experience in air conditioning and heating field. No capital necessary. Address "Weather-makers" P. O. Box 104, Lebanon, Mo.

WANTED CHIEF ENGINEER—Wonderful opportunity for advancement with fast-growing, aggressive manufacturer of fans and blowers. Will be in complete charge of design and development. Ex-

cellent opportunity for creative engineer. Plant located in progressive, modern mid-west community. Staff knows of this ad. State experience and qualifications first letter. Reply to Box 2454, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

Manufacturers agents wanted in different parts of the country by leading manufacturer of portable hydraulic and mechanical pipe and tube bending equipment, for use by contractors and in industries. Our line is nationally advertised. Tal Bender, Inc., 417 N. Water St., Milwaukee 2, Wisconsin.

EQUIPMENT FOR SALE

3-TON unused air conditioners \$590.00 each fob. Miami or New Orleans, or trade one unit each for three new ¾-ton room units. P.O. Box 1208, Miami 7, Florida

300-TON AIR CONDITIONERS — Worthington Carbondale, VDA, 2 Cyl., 13 x 10, 360-rpm V-belt drive, #41707, 41708. New in 1945, with surface condensers, 1220-¾" tubes, 16' long, 18 ga. Removed from G-M Allison Plant, replaced with larger units. Excellent condition, priced very low. Also 100-ton YORK, D-7, 2 cyl., 12 x 9, #71247 (1942). Direct driven by a 100-hp G-E Synchronous motor, 3/60/220, 300-rpm. Write, wire or phone Surplus Clearing House, 1430 Franklin Ave., St. Louis 6, Mo. Phone: Chestnut 4838.

ALLIS-CHALMERS NAMES TENNESSEE OUTLET

Central Air Conditioning & Heating, Inc., Nashville, has been named distributor for Allis-Chalmers pumps in a portion of Tennessee.

NO MORE FREEZE-UPS of expansion valves or capillary tubes!

ICE-X works like magic
SERVICE MEN SAY: "ICE-X IS GREAT!"



When ice forms in expansion valves or capillary tubes, ICE-X is a sure remedy . . . ICE-X is non-corrosive—harmless to parts. An ice-eliminator that can't be beat for Freon, Carrene, or Methyl Chloride systems . . . Order from your jobber. If no jobber, order direct.



Service doesn't falter
when it comes from Harry Alter

Jobbers: Ask for special offer!

The HARRY ALTER CO.

1728 S. Michigan Ave. Chicago 16, Illinois

Exclusive
ICE-X
Distributor

Circle No. 66 on Reader Service Card
and AIR CONDITIONING • FEBRUARY, 1954

UNLIMITED OPPORTUNITY FOR EXPERIENCED SALES EXECUTIVE

National Sales Manager with practical experience and background to promote the sale of Commercial Refrigerators and Display Cases through Regional Managers and Distributors and Dealers already set up on a national basis. Prefer man presently employed, good personality with top qualifications and recommendations, capable of doing a terrific job. Salary and bonus no object to right person. Replies held in strictest confidence. Our executives know of this ad. BOX 2354, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

How To Protect Your Inventions

Completely told and illustrated in the
greatest book on patents

"Inventions and their Protection"

BY

GEORGE V. WOODLING

The Well Known Engineer and Attorney
Specializing in Patent Law

IT TELLS YOU . . .

- how to make your patent pay
- how to prove you are entitled to your own inventions
- how to file for a patent
- how to avoid delays
- how to enhance the value of patents
- what points to consider
- rules to follow
- who owns the patent—the employee or the employer

AND HUNDREDS OF TRADE SECRETS

YOU CANNOT
AFFORD TO BE WITHOUT
THIS INFORMATION

large illustrated volume only \$10.00
WIRE, WRITE FOR YOUR COPY TODAY!

Industrial Publishing Co.

1240 Ontario St., Cleveland 13, Ohio

Circle No. 68 on Reader Service Card

Who?

WHO developed the room air conditioner that didn't stick way out in the room?

WHO improved it with the new slim silhouette that scarcely extends beyond the sill . . . new directional air flow . . . new simplified controls and built-in thermostat on three models?

WHO is backing it with the spectacular support of full-color advertisements in *Life*?

WHO knows air conditioning best?

CARRIER, OF COURSE!

.....

Carrier Corporation

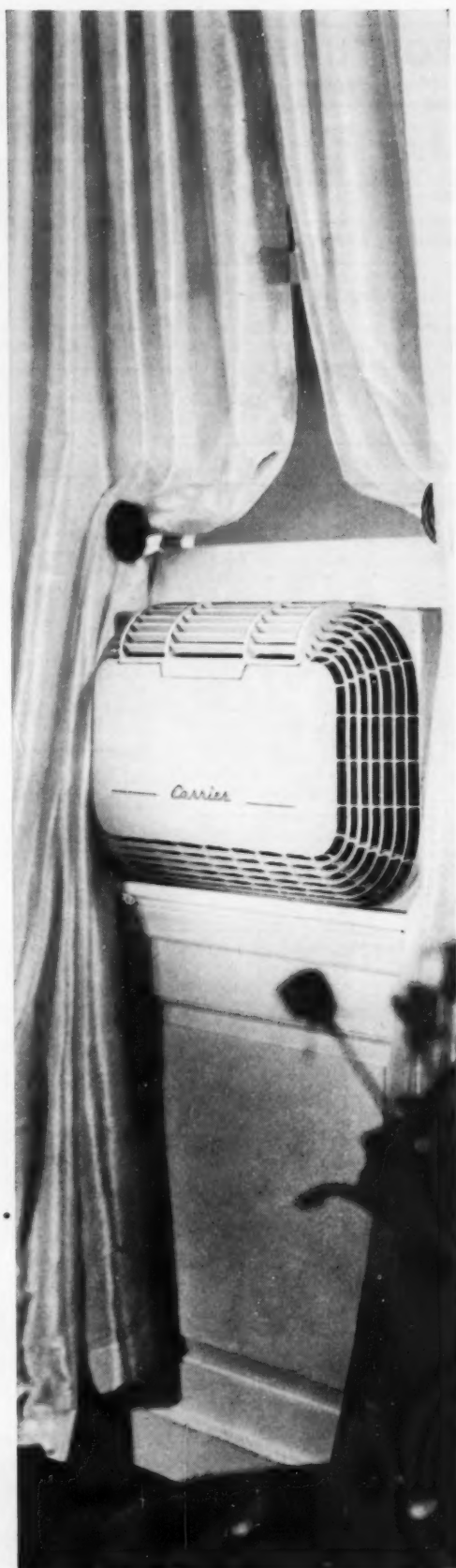
321 S. Geddes Street, Syracuse, New York

Who is my nearest Carrier distributor?
Please send me his address.

Name _____

Street _____

City _____ State _____



COOLING

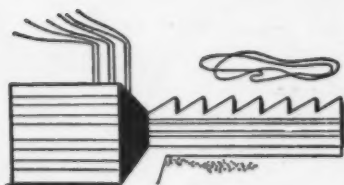
Circulation and
Humidity Control

HEATING

AIR CONDITIONING *Section*



COMMERCIAL



INDUSTRIAL



INSTITUTIONAL



RESIDENTIAL

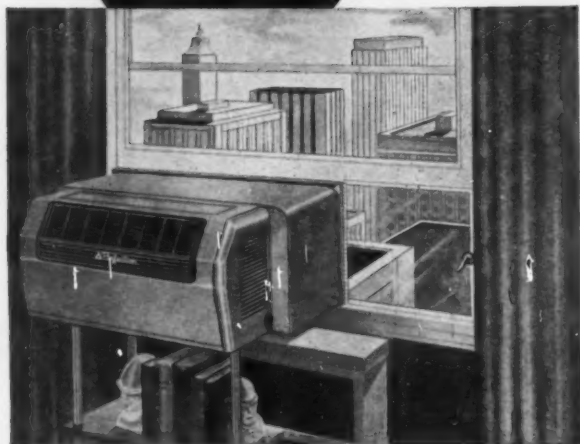
TABLE OF CONTENTS

Fuel Costs Cut 33% by Revamped Heating System	83
Condensate Problem Licked	84
Year-Round Control for Air Conditioning Installations	86
40 Tons of Packaged Cooling	90
Useful Air Conditioning Literature	92
What's New in Air Conditioning Equipment	94

NOW AVAILABLE TO DISTRIBUTORS FOR THE FIRST TIME...

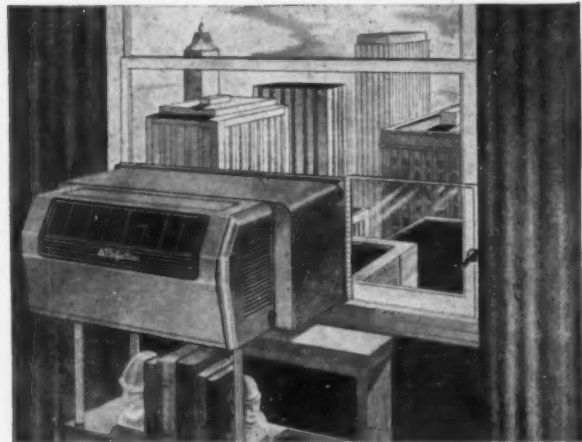
A room air conditioner inside the glass line!

FOR
OFFICES • HOTELS
HOSPITALS
MOTELS



Window Up—Unit On

Window Down—Unit Off



NOW you can really go after the highly profitable office building, hotel, hospital and motel business with the new Perfection adaptation that ends all the installation and operating problems that have plagued these applications.

- Perfection Adapter Kit "cracks" profitable markets you can't touch with other makes. **EVEN** hotels, motels, office buildings and hospitals are your prospects with Perfection.
- Only Perfection stays "inside the glass line" —doesn't disfigure the face of the building.
- This exclusive feature actually simplifies window washing.
- No winter storage problem. Window closes *behind* unit.
- No dripping to stain building or annoy pedestrians.
- Four capacities interchangeable . . . $\frac{1}{2}$ to $1\frac{1}{2}$ H.P. . . . in identical cabinets.
- Local Perfection Promotion Plan gets you ready-to-buy prospects at low cost.

THIS IS ACTUALLY HAPPENING. A typical building manager, once he's seen Perfection's exclusive Adapter Kit says to his secretary, "Take a letter to all of our tenants saying, 'We are happy to advise you that we can now approve air conditioning for your offices *provided you use Perfection or equivalent*'."

IT'S AS EASY AS THAT! Why don't you take the EASY way, too?

PERFECTION STOVE COMPANY
7516-B Platt Avenue, Cleveland 4, Ohio

I'm interested. Tell me more.

Name

Company Name

Address

City Zone State

YOUR HOME DESERVES

Perfection

FURNACES • HOME HEATERS • RANGES • AIR CONDITIONERS • WATER HEATERS

PORTABLE HEATERS

Circle No. 70 on Reader Service Card



COMPACT HEATING UNIT consisting of oil burner, boiler, and circulating pump was located in the utility room, within 6 feet of the heating coil.



TWO-ROW HEATING COIL was installed in the section of ductwork leaving the cooling unit and adjacent to the plenum chamber. Fan circulates air past this coil.

The
HEATING SIDE
of air conditioning

FUEL COSTS CUT 33%

by revamped heating system

A ONE-THIRD reduction in daily fuel oil consumption, plus improved control of heat distribution, were the immediate benefits obtained in a Jacksonville, Fla., office building when the existing warm air furnace was replaced with an automatic hot water heating boiler.

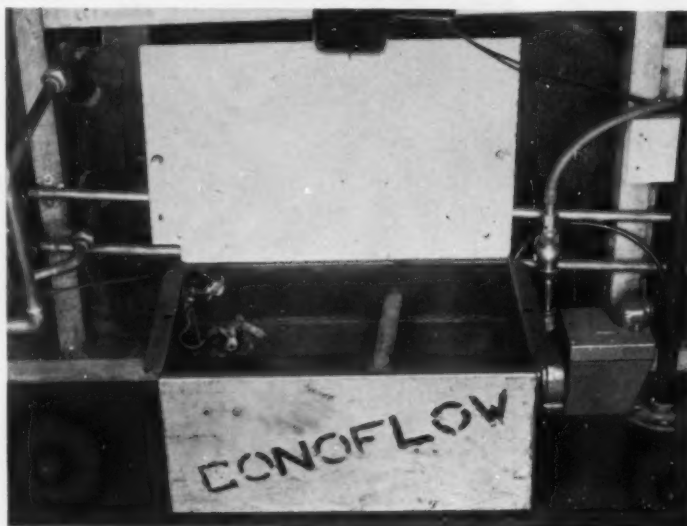
The effectiveness of this installation again underscores the fallacy

of the popular misconception that Florida sunshine automatically eliminates any building heating problems. As a matter of fact, in Jacksonville the temperature drops on some winter days to 25 F, and from that low may rise rapidly to a balmy 85 F.

The original heating plant in this office building consisted of a high-

boy oil-fired furnace equipped with a fan. The air which it warmed was directed into ductwork running from a 3½-ton air conditioning unit to grilles in the walls of five offices.

The oil burner in the furnace consumed a gallon of fuel per hour. It was operated only during office hours. When outside temperatures were low — even for Florida — it



UNIQUE YET PRACTICAL is this device developed to handle the condensate disposal from a water-cooled console air conditioner located in a business office where no floor drain was available.

Condensate Problem Licked

A UNIQUE but practical method of handling condensate disposal for a water-cooled console type air conditioner without the need of a costly floor drain is the "gimmick" which make the installation in the office of Mark Watkins, vice president and treasurer of Conoflow Corp., Philadelphia, Pa., so successful.

The 1-hp water-cooled console unit was selected because Watkins' office is an inside office and an air-cooled unit would have been impractical. Because the office is located in rented quarters, any type of floor drain construction also was not only impractical but impossible. In fact, the only available drain was located well above the level of the drip pan of the air conditioning unit.

The clever mechanism developed to surmount this particular condensate disposal problem consists of a regular "tote-box sump" which is painted on the inside for purposes of water-proofing. A section of hose transfers water from the drip pan of the unit to the sump box. The unit actually was raised approximately 5 inches above floor level when installed.

A tilting mercury switch attached to a float is mounted inside the box. This switch activates the pump when the water level builds up to $\frac{3}{4}$ inch. By lengthening the arm of the float, this water level could easily be increased.

Mounted on one end of the sump box is a centrifugal pump capable of raising the condensate to a head of 11 feet. A check valve was installed above the pump to prevent the condensate from flowing back into the pan when the pump was not in operation.

The condensate disposal unit, according to Watkins, works ideally and requires absolutely no attention. He does say, however, that if he had it to do over again he would pipe the check valve into the condenser outlet pipe, thereby eliminating the need of running a separate line for the condensate return.

was lunch time before comfortable warmth was enjoyed in the business offices.

It just so happened that one of the tenants of this building was Charles H. Liphart, a manufacturers' representative for plumbing, heating, and industrial equipment. So it was quite natural that the owner of the office building should ask Liphart to suggest an improvement in the building's heating system.

Conversion Is Recommended

Liphart expressed the opinion that it was basically wrong to expect economical and efficient operation from the existing heating arrangement when the ducts and plenum chamber actually were sized for a cooling system.

He then called the attention of the building's owner to the advantages which would be gained by installing a 75,000 Btu two-row hot water heating coil in the section of ductwork leaving the cooling unit and adjacent to the plenum chamber.

Hot water to be circulated through this coil, according to Liphart's recommendation, would be provided by an all-in-one heating plant so compact that it could be located in a utility room at the rear of the offices, and within 6 feet of the heating coil. The particular unit specified was the "National Packet", produced by National Radiator Co.

Installation Was Simple

After the building owner had approved these recommendations, the installation was made by Florida Weathermakers, Inc., local air conditioning and heating contractor. The entire job took only half a day of working time to complete.

As this revamped system now functions, the integral oil burner in the heating unit operates a boiler control set at 190 F. The built-in circulator is controlled by a thermostat, along with the fan of the cooling unit.

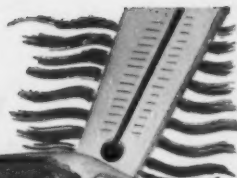
When any of the room thermostats calls for heat, the circulator starts to move a quantity of the 190 F water stored in the boiler. The fan circulates cool air past the heated coil in the duct. The air that has been warmed is then moved

Continued on page 112

Bitter cold



or blazing hot

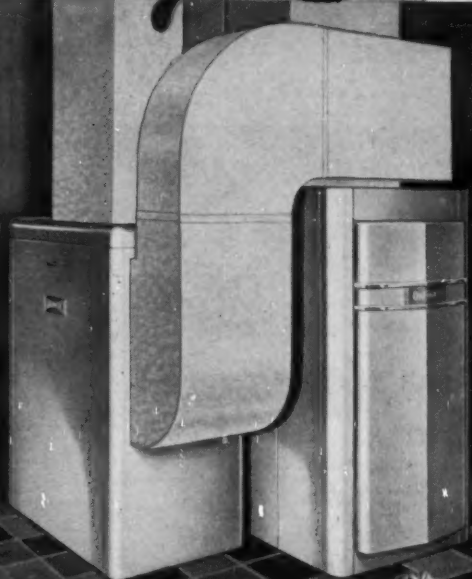


**— it's always
fair weather for**



EUREKA

Williams
DEALERS!

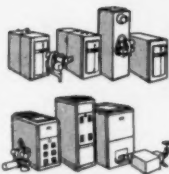


FOR YEAR 'ROUND PROFITS... SELL YEAR 'ROUND HOME COMFORT

with Eureka WILLIAMS oil heat, gas heat, air conditioning

There's no need to let the weatherman cloud your profit-horizon with seasonal selling slumps... not if you're a Eureka Williams dealer. Eureka Williams products cover the home comfort market completely... all year 'round... with the finest in dependable, low-cost heating and cooling. Regardless of climate, or customer preference, you need never pass up a profitable sale. Whether it's oil heat or gas heat, summer or winter air conditioning, a complete unit or a conversion burner... you have the product to fill the bill. What's more, that product is backed by one of the oldest names in automatic home heating: Eureka Williams, a leader in your business for over 30 years.

Write today for full facts about the Eureka Williams franchise... it'll mean hot sales and clear profits... no matter what the season.



OIL-O-MATIC Home heating — with exclusive *Metered Low Pressure*. Complete line for homes of all sizes—for all types of heating systems.



GAS-O-MATIC Home Heating—with exclusive *Metered Flow Pressure*. Models for homes of every size and type.



AIR-O-MATIC Home Cooling—latest member of the famed Williams family. Installed with Oil-O-Matic, Gas-O-Matic or existing forced warm-air heating system to provide year 'round air conditioning at very low cost.



Williams Division

Eureka Williams Company • Bloomington, Illinois
(Division of Henney Motor Company, Inc.)

Better Products. Better Made for better living!

Williams Division • Eureka Williams Company
Bloomington, Illinois

Please send me full facts about new year 'round profit opportunities with the Eureka Williams Franchise.

NAME _____

FIRM _____

ADDRESS _____

CITY _____

STATE _____

CR-2

Circle No. 75 on Reader Service Card
and AIR CONDITIONING • FEBRUARY, 1954

YEAR-ROUND CONTROL

for air conditioning
design • installation •

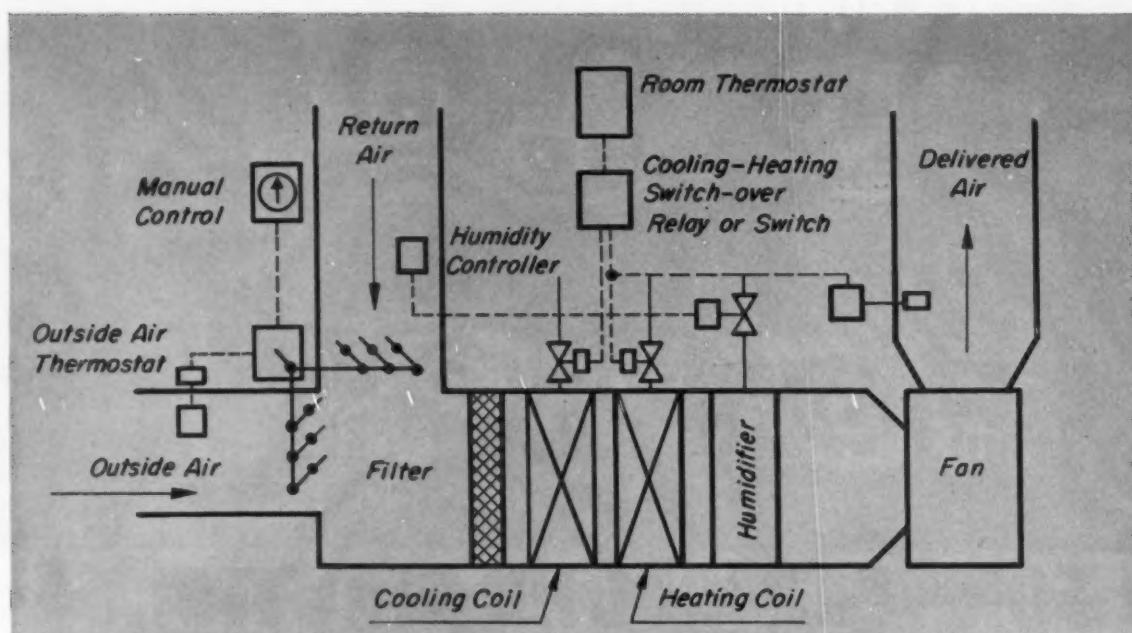


FIG. 1: Air circuit of a typical year-round air conditioner.

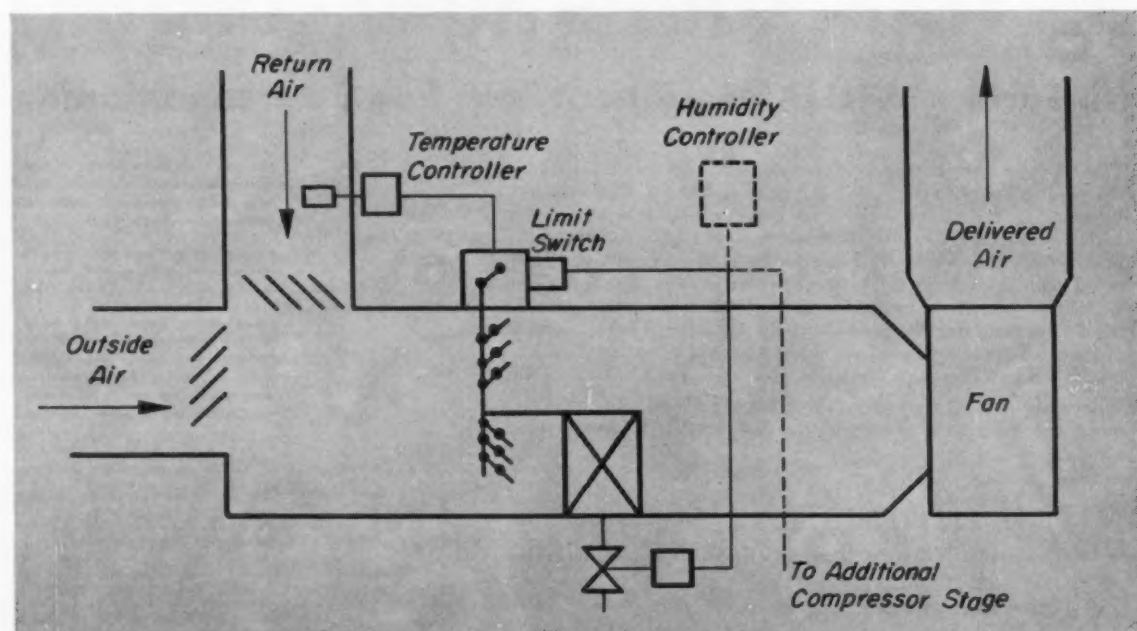


FIG. 2: Diagram of a typical face and by-pass damper control.

This is the third of three articles by Mr. Dowis on the control of air conditioning equipment. The December article dealt with automatic control; last month pneumatic control was discussed.

installations service

by Edward Dowis

A year-round air conditioning system must maintain desired conditions of temperature, humidity, cleanliness, ventilation and air movement under a wide variety of outside conditions and often with widely variable internal cooling and heating demands.

Since inside conditions required during the heating season are quite different from those of summer, the control system must be able to maintain either of two temperature-humidity combinations. It can be made to change from one to the other automatically.

Each piece of control equipment should be selected for the particular

operation it has to perform. The choice of electric, pneumatic or self contained equipment should be made on the basis of suitability for the particular application, dependability and cost. All three types may be found in a complete system, though it is best to standardize on one type, using others only when more suitable for special applications.

The general layout of the control system for a particular installation will be determined by the kind of heating, cooling and ventilating equipment it is to operate, whether or not it is to be zoned for different conditions and the results to be achieved. When a new system is being designed, or alterations are

planned, full advantage should be taken of the economy of operation and measure of comfort possible only with automatic control.

The air circuit of a typical year-round air conditioner is illustrated in Fig. 1. A mixture of outside and return air from the conditioned space is received in the plenum chamber. This mixture can be controlled with a manual controller mounted on the control panel in the office of the manager or superintendent or other desirable place.

It is often desirable to have a thermostat in the outside air duct override the manual control and supply 100% outside air during the cooling season, when the outside temperature falls below that of the

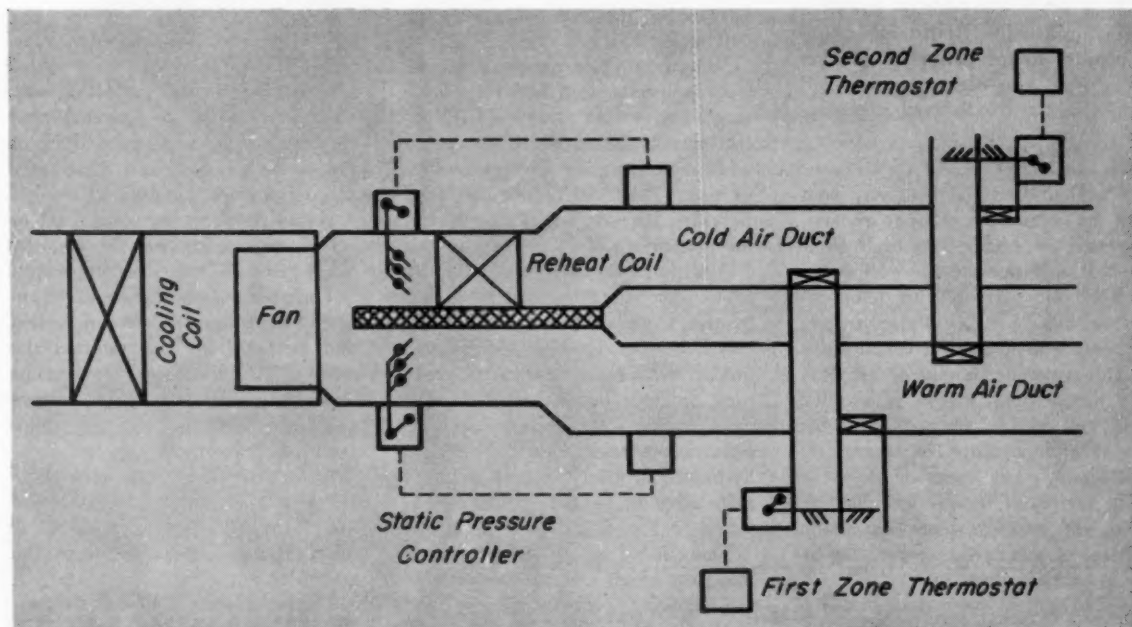


FIG. 3: Double duct method of combining zone control with reheat.

conditioned space, thus reducing the load on cooling equipment and allowing it to shut down during certain hours.

Air is delivered through filters or some other cleaning device to the cooling and dehumidifying coil. This is usually under control of a room or return air duct thermostat operating the compressor, a solenoid valve in the refrigerant line, or modulating valve in a chilled water line. The humidity control may be inherent in the coil and require no instrumentation.

Handling Moisture Load

When the coil temperature falls below the dew point of the air, some moisture is given up. When the moisture load is known, a coil can be selected and installed so as to remove the proper ratio of sensible and latent heat to maintain desirable conditions. When the moisture load is too variable to be handled by the characteristics of the coil, it may be controlled by a humidity controller as described later.

After passing through the cooling coil, air enters the heating coil, often placed adjacent or attached to the frame of the cooling coil. A temperature controller, operating a valve, modulates the flow of steam or hot water through the coil to maintain a desirable temperature in the room.

It is often desirable to install a high limit or low limit temperature controller in the delivered air duct to prevent excessively hot or cold drafts in the conditioned space.

Use of Humidifiers

The low limit control may control the outside air damper or heating coil or both. The high limit control will operate the coil so as to keep the delivered air temperature within desired limits, regardless of the room thermostat demand.

The moisture content of air during the heating season is usually very low and moisture needs to be added after heating. A steam jet, wet filters, water spray or any of a wide variety of humidifiers may be used, with water or steam flow under control of a humidity controller in the return air duct.

Face and by-pass dampers, by which part of the air through the conditioner is passed around the

cooling coil, permit more uniform delivered air temperature during the cooling season, reduce long on-off cycles, and permit better control of humidity. Fig. 2 shows a typical face and by-pass damper control.

As the temperature of the return air is reduced, the face damper is closed and the by-pass opened, permitting more air to by-pass the coil. This proportions the delivered air temperature to the load.



The reduced load on the coil results in lower coil temperature and lower humidity. The limit switch is for the purpose of stopping refrigeration before the face damper is closed to the point of causing the coil to frost.

Where two compressor speeds, two compressors or other capacity stages are available, a humidity controller may be arranged to cut in additional capacity when humidity is high. This will reduce coil temperature, increase total capacity and the proportion of moisture removal.

Additional capacity, controlled by a humidity controller, can be added to the more simple system illustrated in Fig. 1. This will reduce humidity by reducing coil temperature, but to a lesser degree than in combination with by-pass dampers. Return or outside air alone may be by-passed around the coil with results similar to the system illustrated in Fig. 2.

There is a limit to the amount of moisture which can be removed by the capacity control and by-pass methods without bringing the sensible temperature too low.

It is often necessary to bring the air temperature low enough to remove the required moisture and then reheat it to a suitable temperature. This can be done by adding heat after the air has left the cooling coil by means of a steam or hot water coil, electric strip heaters or a heat exchanger using heat from the compressor.

Positioning of Coils

The humidity controller is connected so as to operate the cooling equipment so long as the humidity is higher than the controller setting, regardless of temperature. A temperature controller will serve the dual purpose of adding heat when the temperature is below the controller setting and operating the cooling equipment as required to maintain a sufficiently low temperature.

Assuming that the cooling and heating equipment are of sufficient capacity, both humidity and temperature will be kept at the controller settings. The relative positions of the cooling and heating coils are as in Fig. 1.

Reheating can be combined with zone control so as to permit each room to be controlled by an individual thermostat. It is also possible for one or more zones to be heated while others are being cooled.

Zone Control Problems

The double duct method is illustrated in Fig. 3. Air is first cooled and dehumidified by a cooling coil. Cold air is distributed to each zone through the cold air duct. Part of the air is reheated and distributed through a warm air duct.

As an economy measure, part or all of the heating may be done by a hot gas coil from the compressor.

Each zone is conditioned by supplying the proper mixture of chilled and reheated air to maintain the desired temperature. This can be done by a modulating temperature controller operating mixing dampers in the two ducts.

A rise in temperature will cause the warm air damper to close and the chilled air damper to open. A drop in temperature will reverse the action.

The modulating action of the controller will permit the dampers to

Continued on page 112



THIS MAN

**is on your Sales Force
—but not on your Payroll**

YOUR TYPHOON DISTRICT MANAGER

He's an estimator, a trouble-shooter, a fixer-upper... he's a technical adviser, a crack salesman, he's Johnny-on-the-spot. When the sale hangs in the balance you're mighty glad to have your Typhoon district manager around... you're mighty glad you signed up with Typhoon.

You profit **5** ways with a Typhoon Franchise

- 1 CLOSE FACTORY COOPERATION** • You deal direct with the Typhoon factory. Every member of the organization—right on up to the president—is ready to pitch in and work with you personally.
- 2 YOUR PARTNER, THE DISTRICT MANAGER**... when there's a complicated job to figure... your Typhoon district manager is there to help you.
- 3 TOPNOTCH ENGINEERING** • Typhoon units, open or hermetic, are ruggedly built with plenty of reserve capacity.
- 4 COMPLETE LINE** of packaged air conditioners from 2 to 25 tons. You always have just the size unit your customer wants—when he wants it—competitively priced. You're set up to handle any job in town—efficiently, economically.
- 5 REGIONAL TRAINING SCHOOLS** • intensive sales-engineering course by factory experts, conducted in your own territory. Every employee who attends is worth more money to you!

Write for information about a Typhoon franchise in your territory



Specialists in Air Conditioning since 1909
TYPHOON AIR CONDITIONING CO., INC.
794 Union Street • Brooklyn 15 • New York



Air Conditioning Units 2 to 25 tons • Multi-Packaged Systems up to 60 tons • Evaporative Condensers • Packaged Water Chillers • Air Handling Units... and Typhoon leads in air conditioning for the home—with a complete line of year-round heating-cooling units and heat pumps.

Typhoon Air Conditioning Co., Inc.
794 Union St., Brooklyn 15, N. Y.

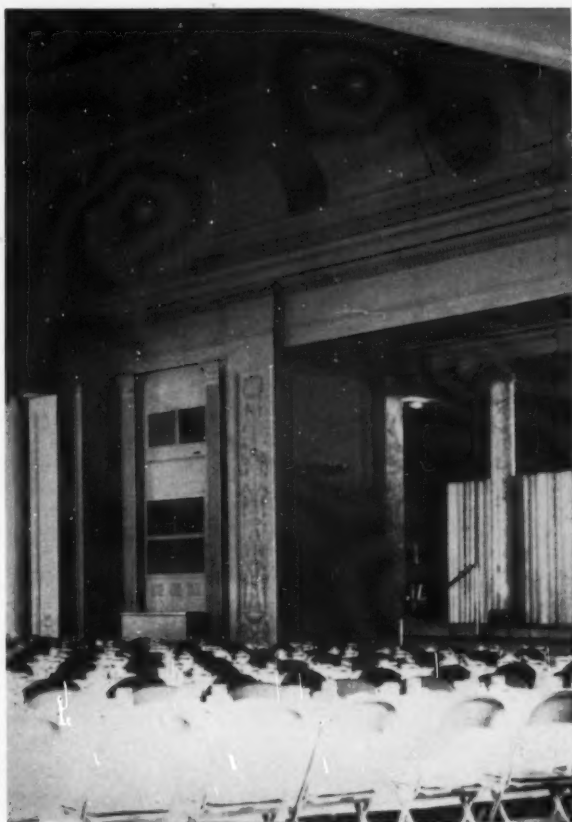
C-2

I would like to know more about the Typhoon Franchise.

NAME _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Circle No. 73 on Reader Service Card

40 TONS OF PACKAGED COOLING



WHEN the University of Wisconsin decided to air condition the Great Hall of the school's Memorial Union, it discovered that there were three fundamental obstacles standing in the way of a successful installation.

In the first place, only a limited amount of space was available for the location of the equipment. Secondly, operational noise had to be held to a minimum. And in the third place, there was a problem of obtaining adequate air distribution.

Basically, these problems all were brought about by the design of the hall itself. All of the open space in the hall actually was needed to accommodate capacity crowds, and few out-of-the-way spots were available for equipment location.

The domed ceiling of this hall, having a perimeter height of only 15 feet but rising to a height of 35 feet in the center portion, further complicated the installation. Since this ceiling was not treated for acoustics, it was essential that the air conditioning equipment operate as quietly as possible.

The uneven space presented by this ceiling design also made the problem of air distribution more difficult, particularly in view of the fact that nothing could be done which would mar the beauty of the hall's interior design.

Making this situation still more complex was the fluctuating occupancy of the hall, which might range from 10 or 15 persons attending a small group meet-

ing to 500 or 600 people crowding in to a presidential tea or a faculty reception.

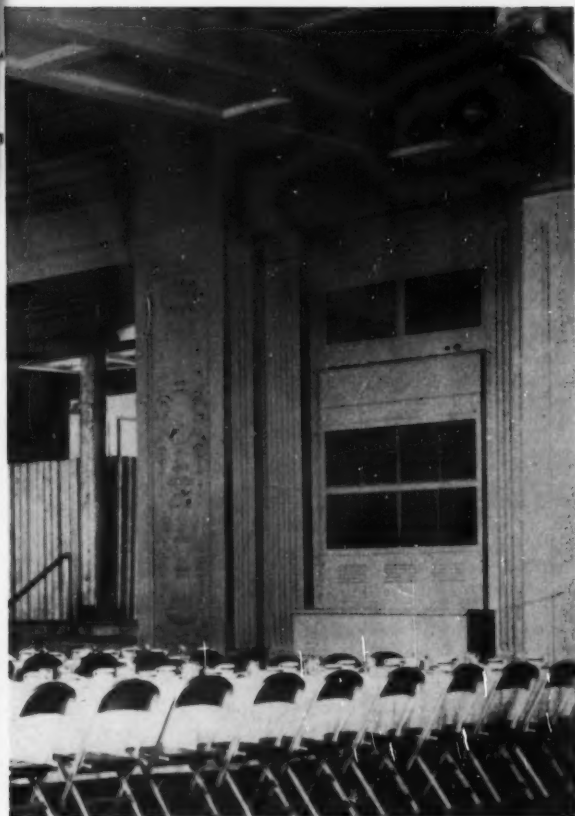
Although initial theoretical load calculations indicated that as much as 80 tons of refrigeration would be required for cooling this hall, it was determined that 40 tons would very adequately handle most of the desired uses. Original specifications called for two 20-ton air handling units to be located in the conditioned area, with compressors located in the basement three floors below.

Because of the involved nature of this installation as originally planned, estimated costs for the job ran quite high. When it actually came down to cases, however, it was found that the installation of two 20-ton packaged air conditioners in the hall itself not only would solve all three of the installation problems but also would keep job costs down to a minimum.

Following is an outline of the three specific problems posed by this installation and the manner in which these problems were solved:

EQUIPMENT SPACE

Problem: The only space available for any type of air conditioning equipment was on both sides of a large stairway. In order to have access to any equipment used, removable covers would have to fit between pillars as shown in the accompanying photograph. For this reason, it was expected that the compressor section would have to be placed elsewhere.



Air conditioning of this Great Hall in the University of Wisconsin's Memorial Union posed three basic problems:

- (1) Equipment Space*
- (2) Operating Noise*
- (3) Air Distribution*

Installation of these two 20-ton packaged units solved them all.

Solution: This problem was resolved by Cliff Reuschlein, vice president and engineer of Hyland-Hall Co., Typhoon distributor in Madison. He pointed out that an entire 20-ton packaged unit would fit in the space next to the stairs, on each side, thereby eliminating the necessity for remote compressor sections, and the correspondingly higher cost of installation and loss of efficiency through extended refrigerant lines.

OPERATING NOISE

Problem: Due to the varied use made of this hall, the air conditioning in operation would have to be quiet enough so that it would not interfere with reception of speeches, or with general conversation, whether the hall was fully or only partially occupied. The domed ceiling added considerably to this problem since it was not acoustically treated or designed.

Solution: Using the example of many theatres which have had excellent results from packaged units located in the conditioned space, Reuschlein convinced University officials that the noise level of such units would not prove objectionable. To prove this point, officials were shown other installations of a similar nature so that they could personally observe the low noise level.

AIR DISTRIBUTION

Problem: Due to the architecture of the hall, it was considered difficult to insure even distribution of cool air throughout.

Originally the hall was ventilated by means of a forced ventilation system. Air was introduced through ornate openings in the ceiling at the center of the ballroom. It was exhausted by means of a gravity roof ventilator. The grilles for the exhaust were recessed in the side wall.

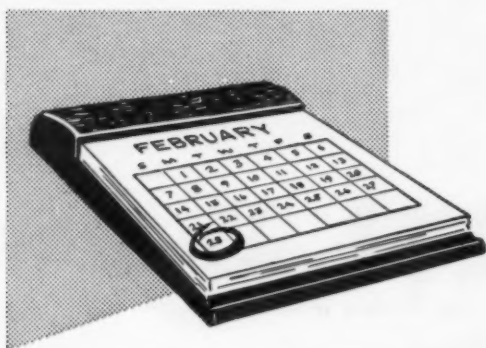
It would have been impossible to follow the same plan for air conditioning. In fact, the introduction of all air at the center with no distribution at the wings was one of the reasons for the installation.

Another problem connected with the air distribution was that Typhoon 20-ton air conditioners, in order to provide adequate filtering for the great quantity of air that passes through them, are normally equipped with an extended filter section, containing diagonally placed filters. This would not have proved attractive, since the filter sections would have had to project into the hall.

Solution: Installing the units called for a complete change in the ventilation system. The exhaust grilles and ducts, located on either side of the stairs, were torn out to make room for the units. A steel I-beam base was built as a foundation, and rubber isolation pads placed on this base to cut down vibration and noise transmission to the floor.

Fresh air supply ducts, designed so that fresh air could be introduced in any percentage, were connected to the units. The fresh air was drawn from the base-

Continued on page 113



Time's almost up!

Take advantage of **REMINGTON'S** new Room Air Conditioning

FREE PRE-SEASON SELLING PLAN

That's right! Time's running out. Soon it will be too late for you to get the benefit of Remington's FREE pre-season promotion plan—the most talked about plan in the room air conditioning industry. Includes a combination of:

FREE—display stands, literature, point-of-sale merchandising pieces

FREE—TV spots

FREE—newspaper advertising

FREE—billboards in your local area

PLUS a host of other selling aids together with Remington's strong program on national consumer advertising.

Act now—Get the details of the "profits-guaranteed" Remington Franchise today. Write to:



Remington
Model 6, 1/2 h.p. deluxe



Remington
Model 8, 3/4 h.p.

HEALTH and COMFORT

...by the roomful



DIVISION OF REMINGTON CORPORATION

13-5 Willey Street, Auburn, N. Y., U. S. A.
Circle No. 74 on Reader Service Card

USEFUL LITERATURE On Air Conditioning

To obtain the information described below, simply circle on the postcard in this issue the key numbers of the items you wish to receive. We will forward your requests to the companies concerned.

ELECTRONIC HOT WATER CONTROLS with adjustable ratio and outdoor reset features for hot water heating systems are presented in Bulletin F6167 available from Barber-Colman Co. This 8-page catalog also contains information concerning the use of an optional night depression with morning warm-up

Circle No. 111 on Reader Service Card

GAS-FIRED UNIT HEATERS in series 23A are described and illustrated in booklet 23-3 available from United States Air Conditioning Corp. Illustrations of both propeller fan type and blower type units are included. A cut-away illustration shows components numbered to match their descriptions printed on the same page. An illustration of both type burner elements with blower and controls numerically matched to their descriptions are also included. Complete capacity charts and roughing-in dimensions are also given.

Circle No. 112 on Reader Service Card

A SELECTION WALL-CHART which shows the comparison between old and new NEMA standard dimensions for ac motors from 1 to 30 hp is available from Westinghouse Electric Corp. This 18 x 24" chart gives old dimensions in blue and new dimensions in red, so that differences can be seen at a glance.

Circle No. 113 on Reader Service Card

PRESSURE AND VACUUM GAGES for indicating, recording and controlling applications are completely covered in a 32-page catalog (7001) available from Minneapolis-Honeywell Regulator Co. Covered in this extensive catalog are indicators, recorders, pneumatic and electric controllers and pneumatic transmission. Typical control systems are shown with schematic diagrams illustrating application features. Complete data on measuring elements, complete specifications and a partial list of charts and scales are included.

Circle No. 114 on Reader Service Card

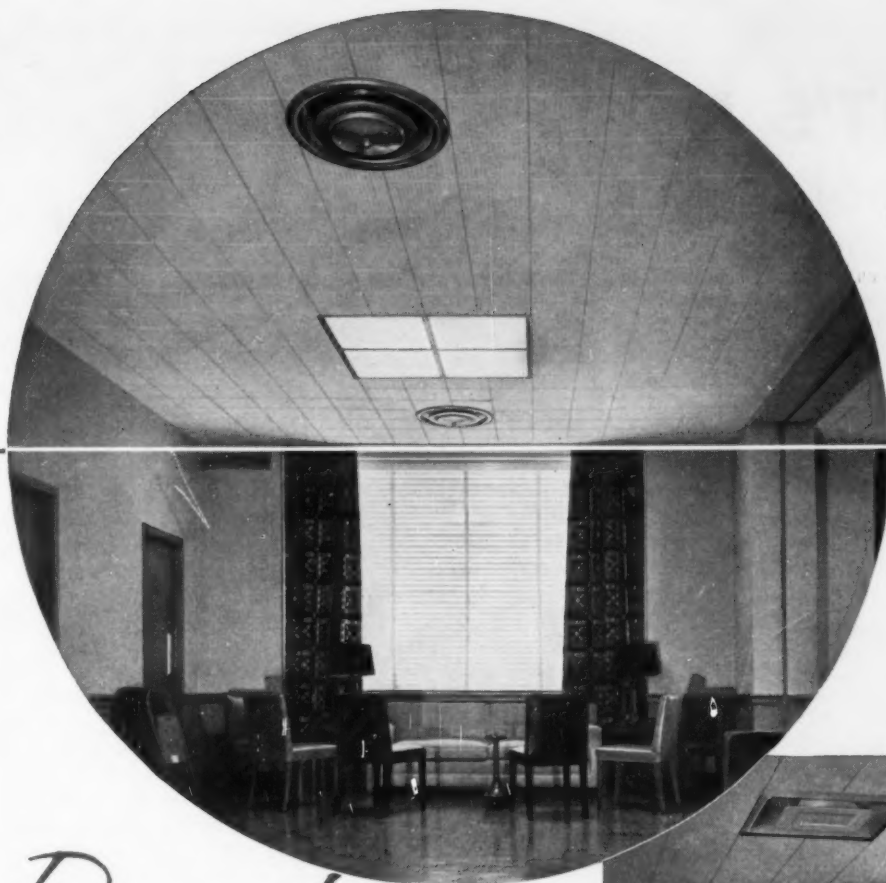
WANT AN EASY WAY to lay-out patterns for ductwork fittings? If you do, the booklet on "Minute Layouts" available from H. Owens Co., Inc., is just the ticket. Included are large step-by-step photographs which show how to use "Jet" pattern developers in laying out patterns in round to round taper, round to oblong, square to round with offset, cone boot, stack boot, and many more difficult fitting shapes.

Circle No. 115 on Reader Service Card

A POWER EVALUATION CHART is offered by Chicago Blower Corp. which shows how to get power savings through selection of the most efficient fans for industrial installation. The chart also provides a ready-reference way to estimate dollars and cents savings on Chicago's "Airfoil" fans.

Circle No. 116 on Reader Service Card

(Turn to page 100 for more Useful Literature)



Round or SQUARE

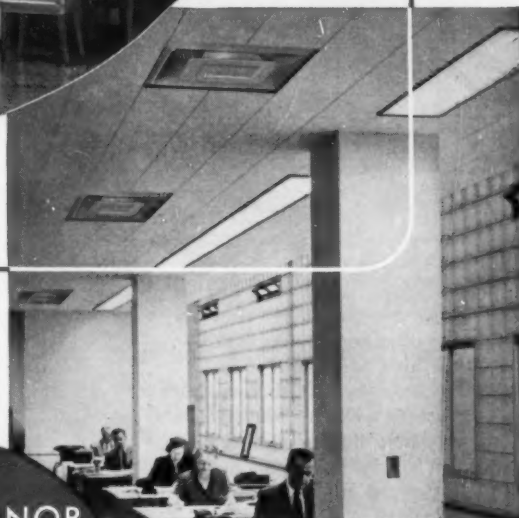
You'll do 3-ways better with KNO-DRAFT

FIRST, you'll assure greater comfort. Kno-Draft Adjustable Air Diffusers control both volume and pattern of air flow. This means *even distribution* of air throughout the conditioned area—with *no drafts*.

SECOND, you'll have less "engineering" to do. The fact that Kno-Draft is adjustable for volume *after* installation means less slide rule work *before* the job goes in. And it's a cinch to reset Kno-Draft Diffusers to meet changed floor layouts.

THIRD, you'll meet highest standards of beauty. Kno-Draft Adjustable Air Diffusers unobtrusively fit into any architectural or decorative scheme. Leave them in their natural aluminum finish, or paint to match the ceiling.

For the complete story, send for your copy of the latest Kno-Draft Data Book. It's free on request. Use the handy coupon or write to Connor Engineering Corporation, Danbury, Connecticut.



CONNOR

kno-draft®
adjustable air diffusers

see our catalog in
ARCHITECTURAL
FILE
or write for copy

CONNOR ENGINEERING CORP.
Dept. C-24, Danbury, Connecticut
Please send me the *new edition* of the Kno-Draft
Data Book—without obligation, of course.

Name.....
Position.....
Company.....
Street.....
City..... Zone..... State.....

Circle No. 71 on Reader Service Card

WHAT'S NEW...

in Air Conditioning Equipment

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

(For more NEW PRODUCTS turn to page 104)

Room Coolers

Product: Models A412, A434, and A410 room air conditioners.

Manufacturer: Fresh'nd Aire Co., Div. of Cory Corp., Chicago, Ill.



Features: The three units have $\frac{1}{2}$, $\frac{3}{4}$ and 1-ton capacities, respectively. All three models include "Electromagnetic" push-button controls which automatically control both the heating and cooling baffles. The units also include a built-in heater and an automatic thermostat control, factory installed. Flush construction of the cabinets permits the conditioner to hide behind the drape line. The cabinets are finished in a cool green which is designed to harmonize with any room color scheme. Accessories and trim are gold colored.

Circle No. 141 on Reader Service Card

Mobile Room Cooler

Product: Mobile room cooler which can be moved from room to room as desired.

Manufacturer: Union Asbestos & Rubber Co., Heating & Cooling Div., Chicago, Ill.

Features: Water cooled unit is claimed to be 30% more efficient to operate than an air cooled unit. Entire unit rolls easily on rubber composition wheels, can be handled by any housewife. Unit does not require any installation or permanent fittings. Owner simply plugs an electric cord into an ordinary outlet. No need for additional wir-



ing or heavy-duty fuses. No permanent hose connection is needed. Water can be drawn from any household tap through a small $\frac{3}{8}$ " rubber hose, similar to one used for a bath spray. Drain from the unit can be connected to a garden hose and water can be re-used for sprinkling lawns or gardens. Unit is 28" high, 18" wide and 17" deep, will cool a room with about 500 sq. ft. Conditioner is equipped with a squirrel-cage fan which delivers 250 cu. ft. of air per minute. A switch permits operation with the refrigeration unit shut off.

Circle No. 142 on Reader Service Card

Packaged Coolers

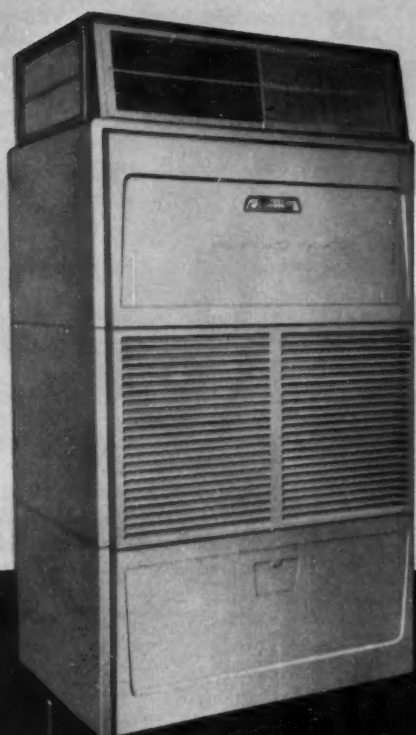
Product: Line of packaged air conditioners with an all-in-one completely sealed cooling system.

Manufacturer: Air Conditioning Division, General Electric Co., Bloomfield, N. J.

Features: All component parts of the hermetic condensing unit, including compressor, motor and condenser are sealed in steel and lubricated for life. Entire system, including cooling coil, drain pan and refrigerant piping is mounted on a single frame that slides out easily for service. It can be replaced as a unit and cabinets, fans and frames need not be disturbed. Compressor spring mounted inside the shell and thick rubber mountings for entire refrigeration ma-



chine provide quiet operation. Adjustable air distributor allows direction of air flow to desired areas after the aid conditioner is installed. Piping can come across the bottom, back or either side. Condenser is quickly adaptable for cooling tower use in areas where needed. An ac-



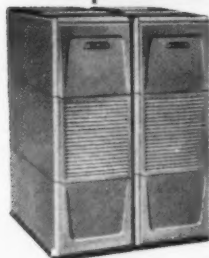
NOW
a bigger-than-ever
money-maker
for you!

*More eye appeal!
More buy appeal!*

New styling... New, handsome finish... New features

Mueller Climatrol

904 SUMMER AIR CONDITIONER



New Mueller Climatrol Type 224-906 Companion Units

Brings you added business on year-round heating and cooling. The type 224 heating unit is gas- or oil-fired — 80,000, 100,000, 125,000 and 150,000 Btu input. The type 906 cooling unit is available in 2-hp and 3-hp sizes. Each size of the heating unit can be interchanged with either of the cooling models, for real flexibility.

904 cooling fills the bill better for you and your customer

The 904 built real sales and profits before, for many heating and air-conditioning men. And, now, you can expect even more — from the new, redesigned 904!

It's still a self-contained cooling unit complete with blower — in 2, 3, 5, and 7½-hp sizes. It's ideal for commercial establishments, such as grocery stores, barber shops, drug stores, restaurants, etc.—as well as for radiator- or radiant-heated homes. But now, in addition, it can be equipped with a steam coil for heating as well as cooling. As in the past, the 904 is available with provisions for duct connections, or with return and discharge grilles.

There are other ways the 904 gives

you more in '54: It has pleasing, modern styling by Brooks Stevens, world-famous industrial designer. It has a new, handsome, smooth finish—Mountain Spring Green. All in all, it's everything you'd expect from The Big Name in Heating and Cooling.

Yes, sir, there are big things in store for you, with the new Mueller Climatrol 904 — more sales, more profits. Make the most of your opportunities, right from the start. Get a 904 out on your sales-floor now.

Write for the Mueller Climatrol all-products catalog showing other new products in Mueller Climatrol's big 1954 line.

D-161A



Mueller Climatrol

2056X West Oklahoma Avenue
Milwaukee 15, Wisconsin

Circle No. 76 on Reader Service Card

cessory heating coil is available. Units are available in 3, 5, 7½, 10 and 15-ton models. The 3, 5, and 7½-ton units have vertical air intakes for in-space installations.

Circle No. 143 on Reader Service Card

Window Units

Product: Line of window-type room air conditioners.

Manufacturer: United States Air Conditioning Corp., Minneapolis, Minn.

Features: "Fiberglas" construction is used both inside and out on all units in the line. This type construction results in lighter weight, elimination of rust and corrosion, minimizing of condensation on the outside of the cabinet and increased sound and thermal insulation. The conditioners offer heating as a standard feature with all models incorporating either reverse cycle operation or electric heat strips. The cabinet is designed to protrude only 2" inside the room. Thermostatic control is standard equipment on all

models. Simplified push-button concealed control panel. Two-speed fan motor provides quiet operation. Simplified, screwless mounting bracket enables installation without marring window frame. In addition



to the cabinet, the base pan, window blockoffs and interior parts, including the partition, blower housing and fan shroud are also constructed of the glass fiber. Three models with cooling capacities of ½, ¾ and 1-ton, feature strip heating as standard equipment while reverse cycle units are available in ¾ and 1-ton sizes. Units are equipped with removable filters.

Circle No. 144 on Reader Service Card

CAN YOU USE MORE BUSINESS?

SALES PROMOTIONS
2054 REVERE ROAD • CLEVELAND 18, OHIO
January 28, 1954

Air Conditioning Companies
Everywhere,
U. S. A.

Gentlemen:

Is yours one of the many air conditioning organizations that can use more sales? And more profits? If so, we're talking to you . . .

We have no merchandise to offer, just sales promotion based on years of success in the air conditioning field. A service of twelve monthly sales letters which you can reproduce and send to your own mailing list. Letters to sell old customers. Letters to find new customers. And just plain letters that **SELL!** On an exclusive territory basis, too. No other company in your marketing area will have this service.

Wanna see? Write in on your business letterhead and we'll send you a sample letter. Judge for yourself whether you want to be the one to tie up this high caliber, low priced salesman in your area.

And what a buy! Only \$100.00 a year plus \$10.00 for every 50,000 population in your marketing area. That's right -- only \$120.00 a year in a city of 100,000, and you're the only one with these sales weapons to use when you're gunning for business. A single extra order for \$500.00 more than pays the cost.

We know we'll be hearing from you.

Very truly yours,

SALES PROMOTIONS

TX Valve

Product: Model 205 CE thermostatic expansion valve.

Manufacturer: A-P Controls Corp., Milwaukee, Wis.

Features: Designed especially for furnace air conditioning units,



new or replacement, valve is made in 2 and 3-ton sizes. Valve is designed for application on conditioners cooled by Freon 12 and 22 refrigerants. Valve employs a field-tested leak-free method of sealing the valve actuating pins. Liquid-

Circle No. 77 on Reader Service Card

charged power element allows the valve to be used over the entire suction temperature range from -40 F to the usual air conditioning temperatures. Valve may be mounted wherever convenient regardless of position, valve-body temperature, ambient temperature or location of the bulb.

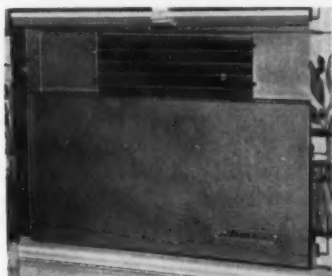
Circle No. 145 on Reader Service Card

Room Cooler

Product: Deluxe model 104-TD room air conditioner.

Manufacturer: Forston Co., Houston, Texas.

Features: Air conditioner mounts flush with the window and does not extend into the room. Compact 1-hp unit is engineered for heavy duty and is equipped with a serviceable hermetic compressor.



Thermostatically controlled unit contains a permanent type filter which is accessible for cleaning without removing the front cabinet. Conditioners contain adjustable louvers and accessible, concealed controls. This unit is the eighth in a line of room air conditioners offered by the manufacturer.

Circle No. 146 on Reader Service Card

Cooler Line

Product: Models J-50, 75, and 100 window-type room air conditioners.

Manufacturer: Jordon Sales Co., Philadelphia, Pa.

Features: 1954 line is comprised of 1/2, 3/4 and 1-hp units, respectively. Units are flush type, extending less than 3" into the room beyond the window sill. Thermostat control are available at additional cost. Six position push-button controls give variation in cooling and ventilating. Models J-50 and 75 have same di-



mensions: about 26 1/2" wide, 15 1/2" high and 22" deep. Cooling capacity for the models is 6200 Btu/hr. Model J-100 has same width and

height as other cabinets but is 25" deep and has a cooling capacity of 11,200 Btu/hr. Metal cabinets are finished in solid colors.

Circle No. 147 on Reader Service Card

Tower Control

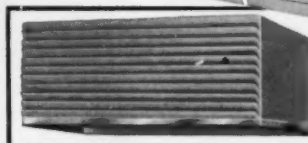
Product: Type 277BT10 cooling tower control for mechanical cooling systems.

Manufacturer: Penn Controls, Inc., Goshen, Ind.

There Is Nothing So Endearing As A Deering



AVAILABLE IN
2 TON AND 3 TON
UNITS



PLENUM CHAMBER
AVAILABLE FOR SMALL
STORES, OFFICES AND
OTHER SELF CONTAINED
INSTALLATIONS

deering - DESIGNED
WITH "HOME OWNERS" IN MIND
DEERING does it AGAIN!

Ideal central cooling unit for builders and home owners. Compact — only 55 inches high, beautiful Swan Gray, insulated against heat and sound transmission. Two and three ton sizes. Can be installed as addition to present heating plant, using existing duct work, or as self-contained package unit. Pays for itself in comfort, health and lower cleaning bills.

MAIL THIS COUPON TODAY!
FOR HANDSOME FOLDER GIVING
SPECIFICATIONS AND INFORMATION



I am interested in a franchise for the
DEERING Central System Air Conditioner
(Please print below)
Name _____
Company _____
Position _____
City _____ Zone _____ State _____

THE DEERING AIR CONDITIONING COMPANY
1069 CELESTIAL STREET • CINCINNATI 2, OHIO

Circle No. 78 on Reader Service Card

Features: Control is designed for air conditioning and refrigeration service to control evaporative condensers and cooling towers. Temperature range of the control is 50-90 F, with a minimum differential of 4°. When wired in series with the cooling tower fan motor



or motor controller, the control assures proper operation by stopping the fan when the water temperature falls below the control setting. Control may be also used to control the circulating pump where no fan is used.

Circle No. 148 on Reader Service Card

Console Units

Product: Line of console room air conditioners.

Manufacturer: Air Conditioning Div., Remington Corp., Auburn, New York.



Features: Available in 1 and 1½ hp air cooled units and also in water cooled units. The 1½-hp console is factory equipped with both an automatic thermostat control and electric heating. The thermostat controls both the heating and cooling functions. The 1-hp unit is factory

equipped with the cooling thermostat but the heating unit is optional. Units are designed for large rooms in homes or offices. Air cooled "Director" and "Overton" models are easily installed or moved and require no plumbing or drain connections. Water cooled units are designed for installations where an outside air source is not available. All models are supplied for 115 and 230 volts dc and 208 or 230 volts ac 50 or 60 cycle.

Circle No. 149 on Reader Service Card

Window Unit

Product: Window air conditioner designed for casement window installation.

Manufacturer: Airtemp Div., Chrysler Corp., Dayton, Ohio.

Features: Entirely enclosed within the room, the unit was de-



veloped in co-operation with the American Window Institute to fit standard casement sashes. It is securely bolted to the frame using the same openings provided for storm windows and screens. The cabinet is easily removable without dismounting. The moulded plastic air discharge grille of the self-contained unit features movable vanes for directing the air flow up, down, or to either side. Controls are concealed under a plastic cover on the front of the cabinet. The conditioner is installed from inside the room. Thermostatic control and 2-speed fan are standard equipment on the conditioners which are available in ½-hp size. Unit comes with a 5-year compressor warranty.

Circle No. 150 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

Thermostat

Product: Thermostat for temperature control.

Manufacturer: Westinghouse Electric Corp., Pittsburgh, Pa.

Features: "Tri-Snap" temperature regulator provides positive snap-action at minimum differential between "on" and "off". Adjusting screw is designed in varying lengths and contours to meet special location and knob or dial attachment requirements. Quick-make and quick-break thermostat is available with an adjustable or non-adjustable temperature range. Standard range is from -80 to 300 F. Make and break speed makes thermostat especially applicable on air conditioners and refrigerators where slow acting thermostats can cause radio, television interference.

Circle No. 151 on Reader Service Card

Air Conditioners

Product: Two year-round air conditioners.

Manufacturer: United States Radiator Corp., Detroit, Mich.

Features: For summer cooling and winter heating with the same unit. For summer cooling, chilled



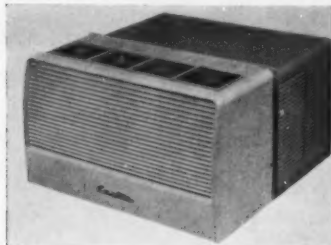
water compressor is remotely located. For heating, hot water is pumped through the same pipes from a boiler located in the basement, utility room, etc. Turning a valve permits switching from cooling to heating. Vertical unit is equipped with a floor cabinet for non-recessed installation. Horizontal model is designed for either recessed or non-recessed installation. Cabinet is available for non-recessed ceiling suspension. Both models include self-contained fans, diffusing grilles, cleanable air filters, and copper coils with aluminum fins. No duct work required except where units cool more than one room.

Circle No. 152 on Reader Service Card

Room Conditioners

Product: 100th Anniversary model room air conditioner.

Manufacturer: Curtis Refrigerating Machine Div., Curtis Mfg. Co., St. Louis, Mo.



Features: Conditioner includes extra large coils with more fins per inch to increase the cooling and dehumidifying capacity. Designed for quick installation, the unit has a hydrolene base that eliminates condensation sweating and a "Fiberglas" insulated bulkhead which reduces the noise factor to a minimum. Unit is designed for installation in homes or offices and is finished in a pastel green color to blend with existing color schemes.

Circle No. 153 on Reader Service Card

Package Units

Product: Line of commercial packaged units and residential air conditioners designed to be used with a warm air heating system.

Manufacturer: Worthington Corp., Harrison, N. J.



Features: Packaged commercial unit has been completely redesigned. Simplified operating controls are concealed behind the enameled nameplate which is hinged with a spring return. A "Reset" control

located on the selector switch eliminates temporary shut downs and service calls. If the protective relays should trip out because of water or power interruption, they may be reset with a turn of the selector knob without removal of any panels. Horizontal louvers with an airfoil shape and vertical vanes are individually adjustable to allow air circulation in any direction. New vertical air intake prevents collection of dust and dirt. Winter air can be tempered with a 2-row steam or hot water heating coil, available as an acces-

sory. Spray-type humidifier can be mounted between the heating and cooling coils, and is also available as an accessory. Hermetically sealed compressor, double oil pump protection, resilient mounting and more efficient motor cooling are other features of the units. Packaged units are available in 3, 5, 7½, 10, and 15½-ton capacities. Residential unit in 3 and 5-ton models are identical in features to the comparable size package unit except for cabinet design and some controls.

Circle No. 154 on Reader Service Card

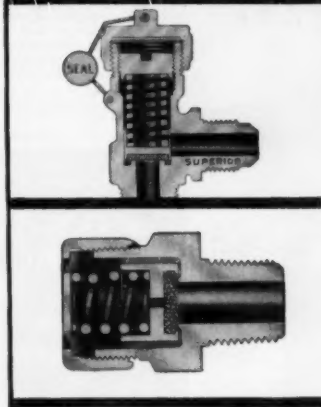
Let a Superior
relief valve do
your worrying!



Relief Valves are fast becoming an integral part of all refrigeration systems because of their fool-proof safety feature. No matter what the cause of a pressure over-load, a Superior Relief Valve safely discharges the excess build-up and promptly reseals the system for continued efficient operation.

All Superior Relief Valves comply with the ASA-B9.1-1950 Code, assuring you of the proper discharge capacity for the size of the vessel. Pressure setting and capacity are stamped on the exterior of each Superior valve... and they are properly set and sealed at the factory.

For your next installation—whether it is built from blue-prints or is an overhaul—ask your wholesaler to select the correct Superior Relief Valve for your purpose. It will pay off in added safety!



Ask your wholesaler
for Superior Relief Valves!

Superior valve and fittings co.

Pittsburgh 26, Pa.



Circle No. 80 on Reader Service Card

IT MAY BE
"Lovely To Look At"

But If The Wiring
Fails . . . So Does Your
Reputation

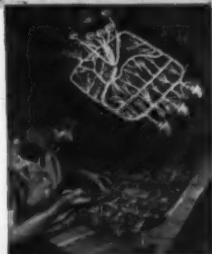



**Be Sure . . . Demand
UNILECTRIC Wiring Systems
in the products you sell**

For over 10 years UNILECTRIC has been "Wiring Headquarters" for the nation's electrical industry. Over 130 leading manufacturers of refrigeration and other electrical appliances protect their products with UNILECTRIC Wiring Systems. Be sure of dependable performance in the products you sell by demanding UNILECTRIC Wiring Systems.

**There is only ONE
Standard of Quality at
UNILECTRIC**

This intricate wiring harness for a jet auto pilot must meet the most rigid specifications. A pilot's life and perhaps a major battle depend on it.



The same workmanship . . . the same standards of quality protect your product wiring and your product's reputation for dependability.

Today millions of UNILECTRIC Wiring Systems protect the performance of over 190 brands of appliances.

**BE SURE
Make the
UNILECTRIC
Quality
Standard
YOUR Standard**

Investigate UNILECTRIC Today!

**UNILECTRIC
WIRING SYSTEMS**

Manufactured by
UNITED MANUFACTURING & SERVICE CO.
411 South 6th Street • Milwaukee, Wisconsin

Circle No. 81 on Reader Service Card
100

USEFUL

BULLETINS • BOOKLETS • CATALOGS

The publications listed below are available to readers without charge. Simply circle on the postcard in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

"V2" UNIT COOLERS which are designed in a "V" shape to give maximum refrigeration in a limited space are presented in a brochure available from Tenney Engineering, Inc. Illustrations of the cooler and engineering drawings show placement of coils, motor, fan, etc. Complete specification and application data is included.

Circle No. 121 on Reader Service Card

YOUR QUESTIONS concerning the way Evis water conditioners work and how they're applied to fluid systems can be answered with the information presented in four booklets available from Evis Mfg. Co. These releases contain illustrations of various applications, a cross-section of a typical unit, complete specifications, and special details connected with refrigeration and air conditioning installations.

Circle No. 122 on Reader Service Card

A CUT-AWAY DRAWING of the "Challenger" spur gear hoist manufactured by Coffing Hoist Co. is featured in bulletin CH available from the firm. Details of construction, photographs of various applications, dimensional drawings and complete specifications are contained in the bulletin.

Circle No. 123 on Reader Service Card

INSTRUCTIONS FOR INSTALLATIONS and a guide to correct installations for flexible metal hose are included in a 32-page catalog presented by Flexonics Corp., Chicago Metal Hose Div. The "Rex-weld", "Rex-tube", and "Rex-flex" lines of flexible metal hose are covered as well as necessary connections, flanges, and fittings. Cross-sectioned views, complete specifications and application data for each type hose is included.

Circle No. 124 on Reader Service Card

THE NEW "LIQUID EYE" liquid indicator is described and illustrated in a mailing piece distributed by Allin Mfg. Co. This release contains a description of the manner in which the sight glass is inserted resulting in a tighter seal as the pressure increases. Other construction and application features are also included.

Circle No. 125 on Reader Service Card

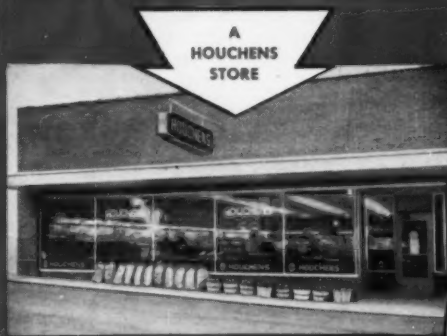
COMPLETE CHARTS included in a 20-page catalog available from Sealed Unit Parts Co. show both commercial and domestic capillary and strainer combinations for replacement and new installations. Strainers and dehydrators, replacement reeds for sealed units, "Supco 88" additive, heat-less solvent, and various other replacement parts and supplies are illustrated and described in detail.

Circle No. 126 on Reader Service Card

(More Useful Literature on page 102)

"Have 23 stores...260 Kelvinator Condensing Units...Use Kelvinator Exclusively"

"Cannot praise too highly," says Ervin G. Houchens, President, B. G. Wholesale Inc., Bowling Green, Ky. "New model store will use 22 3/4 tons of refrigeration... all powered by Kelvinator Condensing Units."



A
HOUCHENS
STORE



A
HOUCHENS
PROBLEM



KELVINATOR
CONDENSING
UNITS

A
HOUCHENS
SOLUTION

Mr. Irvin E. Weber
Commercial Sales Manager
Nash-Kelvinator Sales Corporation
622 Broadway
Cincinnati, Ohio

November 7, 1953

Dear Mr. Weber:

With reference to our recent conversation regarding Kelvinator Commercial Condensing Units used in our Stores, we wish to add the following:

As you know, we have 23 stores in our chain and at present have 260 Kelvinator Condensing Units in service. We cannot praise Kelvinator too highly and have used Kelvinator Condensing Units exclusively since 1946.

As you know, we are now building a new Houchens Supermarket in Bowling Green, Kentucky which will be a model store and will use 22 3/4 tons of refrigeration for display cases and storage coolers. These fixtures will all be powered by Kelvinator Condensing Units. This store is just about completed and should be open in November.

We might add that our association with Kelvinator through your distributor, The Refrigeration Service and Supply Company, here in Bowling Green, Kentucky has been very satisfactory and we are looking forward to continued success using Kelvinator Condensing Units.

Yours very truly,

B. G. WHOLESALE, Inc.
HOUCHENS MARKETS' CENTRAL OFFICE

E. G. Houchens

Ervin G. Houchens
President

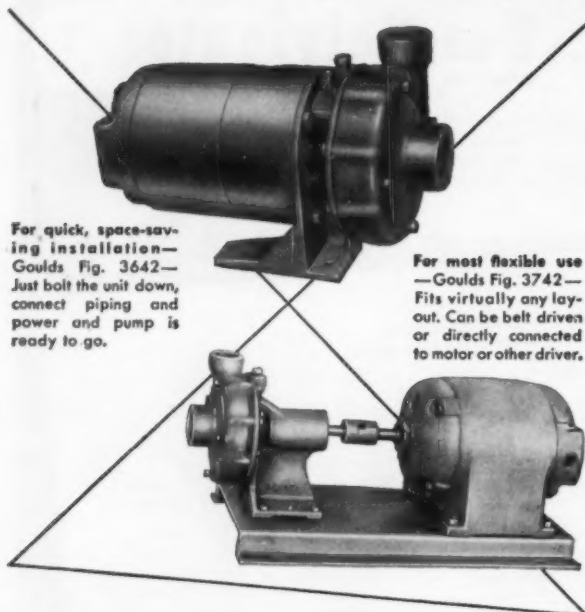
Where a business relies on cold, merchants rely on dependable, economical Kelvinator-operated refrigeration. They have found that Kelvinator has the answer for every refrigeration problem. Whether the problem is condensing units, back room refrigerated storage space, frozen food merchandising cabinets or a new ice cream merchandiser to increase "spot sales", you will find the equipment that exactly meets your needs in the Kelvinator line.

Get full information today. See your local Kelvinator representative—or write Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Michigan.

Kelvinator

LEADERS IN COMMERCIAL REFRIGERATION FOR 39 YEARS

Which of these 2 COST-CUTTING GOULDS PUMPS best fits your air conditioning plans?



For quick, space-saving installation—Goulds Fig. 3642—Just bolt the unit down, connect piping and power and pump is ready to go.

For most flexible use—Goulds Fig. 3742—Fits virtually any layout. Can be belt driven or directly connected to motor or other driver.

both units have these advantages

EASY TO CONVERT—Just change impeller and casing to convert from one size to another.

SPECIAL DESIGNS—Both units are designed for air conditioning, but both can be used for booster and condensate service, too. Capacities to 110 G.P.M., heads to 120 ft.

QUIET OPERATION—The only moving part is the balanced impeller which assures minimum noise and wear.

NO STUFFING BOX LEAKAGE—Mechanical seal prevents leakage without binding shaft. Requires no adjustment or maintenance.

TROUBLE-FREE SERVICE—Sturdy construction and permanent alignment of moving parts assure long operating life with minimum maintenance.

For full details, specifications, performance curves, send for Bulletins 624-A3 and 625-A3.



Circle No. 83 on Reader Service Card

USEFUL LITERATURE

Continued from page 100

THUMB CONTROL of the "Sod-R-Braze" acetylene-air torch is featured in an 8-page pamphlet presented by National Cylinder Gas Co. The 3-way control for operation, pilot light and off positions is described and illustrated. Also covered are complete solder-brazing outfits for air conditioning and refrigeration uses and a new refrigerant leak detector unit. Torch tips, gas cylinders and other accessories are also described.

Circle No. 127 on Reader Service Card

PIPE COUPLINGS which eliminate the necessity for threading, flaring, or grooving prior to installation of pipe unions are described in Folder No. 103, available from Morris Coupling & Clamp Co. A cross-section photograph illustrates construction details of the coupling and the three-step installation process is diagrammed. Complete specifications are also listed.

Circle No. 128 on Reader Service Card

A BUYER'S GUIDE to the All-State line of alloys and fluxes for welding, brazing, soldering, cutting and tinning is available from All-State Welding Alloys Co., Inc. This pocket-sized edition replaces a previous issue and covers many more products than were previously covered. Included are 14 alloys and necessary fluxes for use with aluminum and its alloys; 8 for cast iron; 11 for copper and copper bearing alloys; 4 for nickel; 8 for stainless steel; 11 for steel; 2 for zinc-base die cast; 1 for tinning, 1 for galvanizing and 1 for cutting without oxygen.

Circle No. 129 on Reader Service Card

REFRIGERATOR HARDWARE in many styles and for many different applications is presented in a complete catalog available from National Lock Co. Catalog No. 53, a 30-page, 2-color release, contains excellent illustrations of the complete line of hardware for refrigeration equipment. Also included are line drawings showing installations for each piece of hardware in addition to engineering drawings which furnish complete specifications.

Circle No. 130 on Reader Service Card

A SLUG ELIMINATOR designed to prevent liquid refrigerant slugs from returning to the compressor by eliminating them is described in bulletin SE-1, available from M. Blazer & Son. Use of the device in conjunction with flooded or dry expansion chillers, finned coils, and also as a hot gas defroster is described. Schematic drawings in 2-colors show operations and methods of installation, as either an eliminator or as a defroster. Complete dimensions are furnished.

Circle No. 131 on Reader Service Card

BLIND RIVETS are described and detailed in a 12-page catalog available from Townsend Co. Catalog TL-76 includes information on applications, mechanical specifications, types, descriptions, and a list of stock blind rivets available. Illustrations show various methods of application for many types of industries. How these "Cherry Blind Rivets" work is illustrated by a series of illustrations showing step-by-step installation procedures. Rivet guns and other accessories are also described.

Circle No. 132 on Reader Service Card

(See page 92 for Air Conditioning Literature)

14 Million



Tecumseh

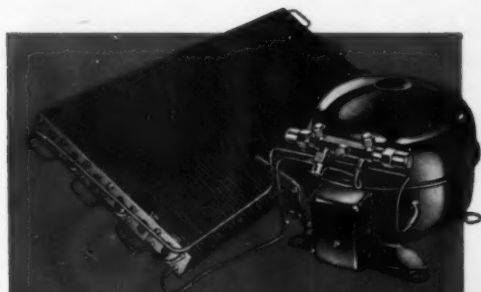
COMPRESSORS SHOULD MEAN \$\$ TO YOU . . .

AND HERE'S WHY: The 14 million Tecumseh compressors now in the field represent a really big replacement market for you. Since Tecumseh is now building better than 3 million compressors per year this market is growing rapidly. Standard replacement hermetics for all types of applications are available for most units now in the field whether the original compressor was supplied by Tecumseh or not.

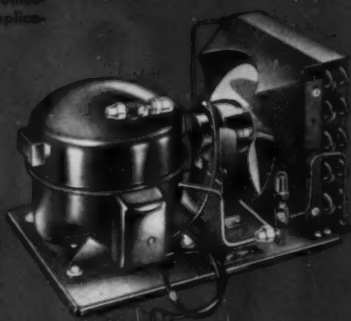
When you use Tecumseh hermetic replacements you get maximum customer satisfaction with a minimum of installation time. You are assured of having the right compressor for the application and know the replacement unit will fit the cabinet.

Your savings in time, the benefits of customer satisfaction and the profit on the sale add up to more dollars in your cash register when you buy Tecumseh.

See your Tecumseh Selective Wholesaler for all your refrigeration requirements—there's one located near you.



Models 32812 and 34412, 1/2 and 3/4 H.P. static condensing units for domestic refrigeration applications.

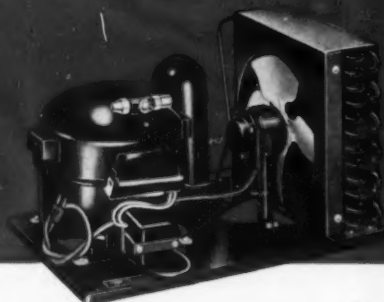


Models 34814H and 34414H, 1/2 H.P. fan-cooled condensing units for domestic refrigerators and freezers.

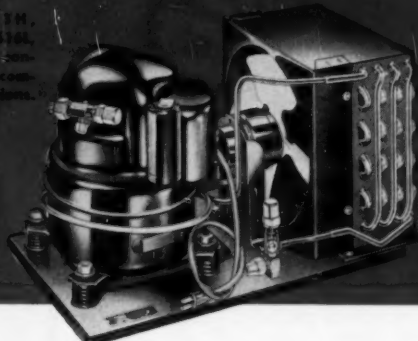
Model P911, 1/2 H.P. fan-cooled condensing unit for limited space domestic and light commercial applications.



Models 52511H, 52513H and 52514H, 1 1/2 H.P. fan-cooled condensing units for commercial applications.



Models C3N14HT and C3N14LT, 1/2 H.P. fan-cooled condensing units for expansion valve systems.



For full information write:



TECUMSEH PRODUCTS

TECUMSEH, MICH. *Company*

EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

★ The world's largest producer of condensing units for the refrigeration industry. ★

NEW PRODUCTS

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

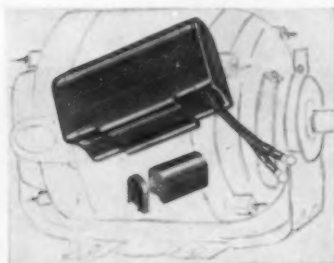
(For Air Conditioning Products turn to page 94)

Capacitor

Product: Type EXWCB motor starting electrolytic capacitor.

Manufacturer: Cornell-Dubilier Electric Corp., South Plainfield, N. J.

Features: Streamlined case is only 4" long, is made of molded bakelite. Container is hermetically



sealed by means of steel spider-ring which presses firmly against a rubber bakelite washer. Rubber lining of washer presses against inner ledge of container, sealing container permanently. Black enameled tempered steel mounting clip is shaped to conform to the curvature of the motor frame. Opening in bottom of case permits connecting wires to pass from the capacitor terminals into the motor housing. Case cap is easily removable for testing at the terminals without unclipping case from the mounting or motor frame.

Circle No. 161 on Reader Service Card

Dairy Case

Product: Model 3100 self-serve dairy display case.

Manufacturer: Sherer-Gillett Co., Marshall, Mich.

Features: Unit has firm's patented RA-15 refrigeration system which uses recirculated air to cut down running time and operating cost of condensing unit. Two deck

model enables mass display to obtain efficiency and low cost operation for food store operators. Display case has modernized appear-

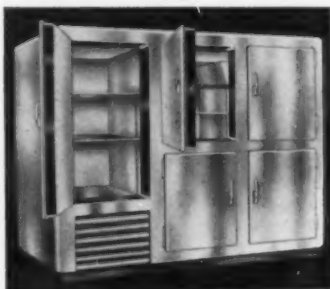


ance through addition of an extruded aluminum panel on the front of the case and matching price tag moulding. Full length mirror reflects contents of upper deck. Additional display area is available on flat top of superstructure.

Circle No. 162 on Reader Service Card

Refrigerator-Freezer

Product: Dual-temperature "Flex-O-Unit" refrigerator and freezer.



Manufacturer: Stainless Food Equipment Co., Newark, N. J.

Features: Freezer section, located behind one door, maintains temperature of 0 to -10 F. This section is lined with zinc metallized double wall cold plates, has one ad-

justable aluminum shelf in addition to a fixed cold plate upper shelf. Full 4" insulation separates freezer section from standard refrigeration area where the temperature is maintained at about 36 F by means of a high-humidity coil, giving independent refrigeration in this section. Self-contained models operate off a single sealed compressor, provided with 3 control valves. Compressor covered by 5-year warranty. Units are all metal construction, including doors. Standard units available in 15 self-contained and 8 remote models.

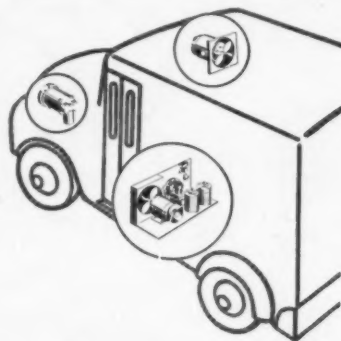
Circle No. 163 on Reader Service Card

Electrical System

Product: Packaged electrical system for mechanical truck refrigeration.

Manufacturer: General Electric Co., Schenectady, N. Y.

Features: System makes possible round-the-clock high voltage refrigeration for light delivery trucks with operation completely automatic and independent of the driver. System is made up of an alternator, an evaporator motor, a regulator,



a rectifier, and a compressor drive motor. Designed to operate at full capacity off the truck crankshaft whether the truck is idling or running at maximum road speed. When the truck engine is not running, system can also use a standard 115 volt house current for the power source. When standby power is used no extra motors or transformers are required. Battery power is not required at any time. Equipment backed by G-E one-year warranty.

Circle No. 164 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

Tube Bender

Product: "TT-57" two-in-one bender.

Manufacturer: Tal Bender, Inc., Milwaukee, Wis.

Features: Light weight tube bender has two bending sizes in one tool. Both bending sizes have 3"

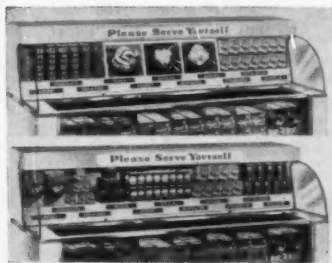


radius making neater appearance when $\frac{5}{8}$ and $\frac{7}{8}$ " o.d. are used in parallel runs. Unit consists of round base with two grooves. Two hooks are attached for fastening tubing. Calibrated base is attached to a handle for which a threaded hole is provided. Pipe handles, not included, are pieces of regular $\frac{3}{4}$ " pipe. Unit can be used to bend tubing, especially hard and soft copper in $\frac{5}{8}$ and $\frac{7}{8}$ " o.d. ($\frac{1}{2}$ and $\frac{3}{4}$ " nominal).

Circle No. 165 on Reader Service Card

Special Superstructure

Product: Convertible display superstructures, models GF-13 and GF-10.



Manufacturer: Refrigeration Div., Savage Arms Corp., Utica, N. Y.

Features: Convertible superstructure allows merchant to get increased profit from related ice cream items by removing pictures and using space for additional display area. Removable panel may be used for promoting special sales,

tie-ins, etc. Flat space on top of superstructure provides additional space. Superstructures have clear glass fronts, plastic flavor strips and fluorescent lighting.

Circle No. 166 on Reader Service Card

Connectors

Product: Three sizes of "Scotchlok" electrical spring connector for making splices in electrical wiring.

Manufacturer: Minnesota Mining & Mfg. Co., St. Paul, Minn.

Features: Three sizes available to accommodate wire from No. 6 to No. 18 AWG, either solid or stranded. Connectors are made of zinc-plated steel wire in the form of a tapered coil spring. Lubricated connectors are easily screwed on the stripped ends of wire with the fingers. Notched turning stem provides adequate leverage during application, then can be snapped off leaving a neat splice with no sharp ends. Coil spring design connector to expand while being applied but provides a shake-resistant, tension

NO CYLINDERS — NO DEPOSIT

USE IT — and throw away Container!

With
"FREON-12"
95/100 lb. Net

"FREON-114"
1 lb. Net

SULFUR DIOXIDE
1 lb. Net

24 cans to the box
Packed in cartons of 6

DISPENSER VALVE—Pictured (below) is the new improved dispenser valve for use with CHARG-A-CAN. Acts as valve, puncturing device and connector for the CHARG-A-CAN. Allows you to withdraw part or all of contents by desired valve operation. Can be re-used for many hundreds of charges.

Charg-A-Can

PACKAGED REFRIGERANT

You'll save time and money with Eston's **Charg-A-Can** disposable refrigerant containers. Convenient to carry. Safe and easy to use. **Charg-A-Can** units are filled under carefully controlled conditions, with all material expertly analyzed for purity. Available with "Freon-12" in 95/100 pound net contents. "Freon-114" in one pound net contents and Sulfur Dioxide in one pound net contents. **Charg-A-Can** is the practical, economical answer to your refrigerant needs.

Now available in attractive, new 6-can Handi-Pack containers for ease in handling, stocking and display.

YOU BENEFIT 4 WAYS

1. Elimination of Cylinders
2. Economical — No Waste
3. Factory Control of Purity
4. Usable in Accurate Amounts

Call Your Local Eston Wholesaler—Or Secure His Name From

ESTON CHEMICALS DIVISION
American Potash & Chemical Corporation
3100 E. 26th ST., LOS ANGELES 23, CALIFORNIA

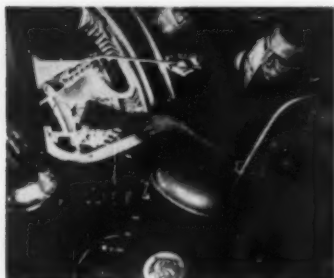
grip on the wires once the splice has been made. Small diameter of the connector adds only a fraction of an inch to the diameter of the wire. Connectors are available in boxes of 100.

Circle No. 167 on Reader Service Card

Safety Solvent

Product: "Turco-Solv" quick drying safety solvent.

Manufacturer: Turco Products, Inc., Los Angeles, Calif.



Features: Designed for cleaning electrical equipment such as wiring, fuses, motors, switches, etc. Especially formulated to replace carbon

tetrachloride in all cleaning operations, solvent combines least toxic solvents available. Solvent removes all deposits of grease, oil, metallic particles, carbon dust, etc. It leaves no oily residue, requires no after-neutralization. Fluid is non-corrosive, is safe for use on all metal and wood surfaces, as well as well-bonded paint. It has a tag closed cup flash point of over 200 F. It will not leave flammable vapors or residues upon evaporation. Since it is non-conductive, solvent can be used to clean motors while they are hot. Applied by low pressure spray or brush.

Circle No. 168 on Reader Service Card

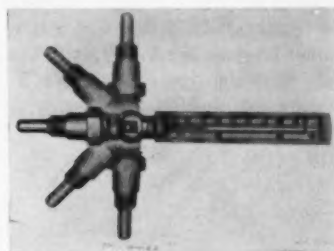
Thermometer

Product: "Adjust-angle" industrial thermometer.

Manufacturer: Weksler Thermometer Corp., New York, N. Y.

Features: Instrument can be positioned in any angle through an 180-degree arc, back or front, right or left. Can be supplied with all standard fittings and standard ranges

up to 750 F. Flexible connection minimizes breakage due to shock or vibration. Unit offers greater visibility and ease of angle change sim-



plifies maintenance and spare stock requirements. Unit has a 5" case, is a supplement to line of 7, 9, and 12" case size thermometers.

Circle No. 169 on Reader Service Card

Blow Torch

Product: Liquefied petroleum hand model blow torch with a disposal fuel tank.

Manufacturer: Turner Brass Works, Sycamore, Ill.

Features: No filling is necessary because the entire fuel tank is

Your Customers'
Best Buy. . .

IDEAL
Speed-Freeze
PRODUCTS

BEVERAGE COOLERS
unexcelled storage capacity
(56 cases 12 oz. - 8 ft. cooler!)

INSTANTANEOUS
DIRECT DRAW
DRAFT BEER COOLERS
(with refrigerated faucets)

IDEAL

COOLER CORPORATION

2953 Easton Ave. St. Louis 8, Mo.

Circle No. 87 on Reader Service Card

106

Plastic EXTRUSIONS

Specialists
In Custom
Extrusions
Send Prints
for
Quotation

- DOOR GASKETS
- DUCT SEALS
- WEATHERSTRIP
- FLEXIBLE TUBING
- GLAZING CHANNELS



Jarene "B" Vinyl Plastic is an exclusive Jarrow compound. It is long lasting, weather resistant, compresses easily and is flexible to almost any degree from soft to semi-hard. Offered in a wide choice of colors.



Our plant is geared for small runs as well as large. All new, modern equipment is operated by skilled plastic craftsmen with many years experience.

Over 25 Years Of Service
To The Refrigeration Industry.

JARROW PRODUCTS
470 N. LA SALLE ST. CHICAGO 10, ILLINOIS

Circle No. 88 on Reader Service Card

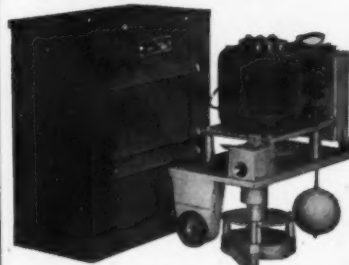
FEBRUARY, 1954 •

Pumps and Condensate Disposal Units

A large selection of heavy duty pumps for continuous duty under severe operating conditions.



Eastern condensate units are available for normal or high temperature operation. Completely automatic and foolproof.



Send for full information . . .

Eastern INDUSTRIES, INC.

296 Elm St., New Haven, Conn.

Circle No. 86 on Reader Service Card
COMMERCIAL REFRIGERATION

replaced by a refill unit when needed. Special features include factory-set pressure relief valve, wide range positive-control flame adjustment, I.C.C. approved heavy-gage large diameter tank for greater stability and easier handling. Tank



measures about 3" in diameter and about 9½" high. Torch fits in tool box or in overall pocket. Special accessories available include a heavy duty burner, pointed soldering tip, chisel point soldering tip, and flame spreader.

Circle No. 170 on Reader Service Card

Walk-In Freezer

Product: "Chill-Air" walk-in freezer.

Manufacturer: Nor-Lake, Inc., Hudson, Wis.



Features: Designed for installation in grocery stores, cafeterias, restaurants and taverns, freezers combine cellular rubber expansion joints for close fit with a full low temperature insulated wall. Freezer is sealed with aluminum foil vapor barrier material. Interiors are finished with vertical grain Douglas

fir flooring with flush joints for easy cleaning. All framing is dipped in asphalt wood sealer to resist moisture and is cross-braced for structural strength. Metal door, equipped with special low temperature hardware and gasket, seals completely to prevent heat infiltration and to maintain steady low temperature. Semi-rigid glass fiber insulation is used throughout.

Circle No. 171 on Reader Service Card

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

ROTARY SEAL

Replacement Units

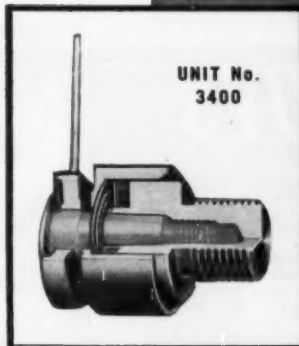
The original precision-built replacements for Commercial, Semi-Commercial, Air Conditioning and Home Refrigerator Compressors . . . Proven by outstanding performance for over 23 years!

Easy to install . .

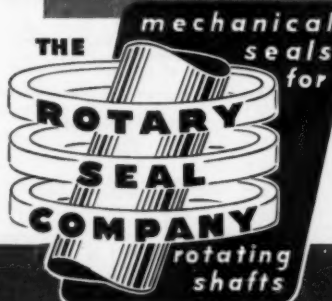
*Efficient in
operation . .*

*Simple in
construction . .*

Economical . .



**UNITS FOR ALL
STANDARD MAKES**



**AT ALL
LEADING
JOBBER'S**

"Seal with

Certainty!"

**2020 NORTH LARRABEE STREET
CHICAGO 14, ILLINOIS, U.S.A.**

CANADIAN AGENT: 2025 ADDINGTON AVENUE, MONTREAL 28, QUEBEC, CANADA

Circle No. 89 on Reader Service Card

3/4-hp. It can also be used for testing the continuity of an entire electric circuit including control, relay switch, starting capacitor and wiring system.

Circle No. 172 on Reader Service Card

Smokehouse

Product: "Grand Prize Model 1400" portable smokehouse.



Manufacturer: Koch Supplies, Inc., Kansas City, Mo.

Features: Completely automatic electric operation. Automatic ther-

mostat controls temperature. Smoke density controlled with similar precision by electric sawdust-feeding device. Capacity of 500-lb of meat, fish, poultry, etc. Entire cabinet and door are fully insulated. Rigid protective grills over heater elements catch any products that might fall from supports. Smoke is generated in separate cabinet at one side by separate electric heaters. Low design makes loading easy. Top row of smoke stick supports is just inches over 6' above floor level.

Circle No. 173 on Reader Service Card

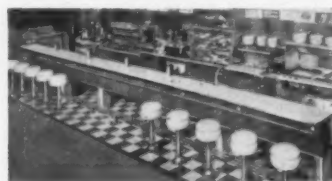
Fountain Equipment

Product: Line of fountain and food service units.

Manufacturer: Bastian-Blessing Co., Chicago, Ill.

Features: "Hi-Line" units have work tops raised 3" above conventional dimensions, are 6" narrower from front to back. Tops constructed from one piece 16-gage stainless steel which extends below the rounded front edge, across the top and up the back splash. Bottoms

are 9" off the floor. Fountain unit comes in 10- and 20-gallon capacities, with or without a beverage



dispensing system for serving beverages at the counter. An off-the-floor counter with a clearance of 18 1/2" is also available.

Circle No. 174 on Reader Service Card

Power Saw

Product: "Sawzall" self-contained portable power saw.

Manufacturer: Milwaukee Electric Tool Corp., Milwaukee, Wis.

Features: Saw has a 3/4" stroke and operates at 2250 strokes per minute. Cuts through wood, galvanized sheet, wire nails, Formica, etc. Powered by heavy duty 110 volt universal type motor and is equipped

BIG BUYS

IN SMALL PRECISION

FLOAT CONTROL VALVES

For controlling water in humidifying units, pan fillers, air conditioning equipment, evaporative coolers, and air washers. No. 51 and 52 Valves accurately maintain water lines as low as 1" deep. Float adjustable. See your jobber or write us.

No. 51

Only 5 1/2" long overall. Non-corrosive metals throughout. Easy to install by drilling one hole. Capacity 1/2 gal. per minute at 50 lbs. pressure.

No. 52

8" long overall. Same features as No. 51 Valve, except larger capacity—1 gal. per minute at 50 lbs. pressure.

**QUICK HOOK-UP
SADDLE VALVE**

Fits 1/2" and 3/4" pipe. To install, just drill 1/4" hole in pipe. Outlet provided for 1/2" O.D. copper tubing.

**HANDY NEEDLE
VALVE**

Ideal to control water supply to humidifiers and water valves. 1/4" I.P. male end and 1/4" O.D. copper tube size outlet.

See your jobber or write

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD, CHICAGO 41, ILLINOIS

Circle No. 91 on Reader Service Card

Sprayon

Sensational
INSTANT
PAINT!

**The Serviceman's
Best Friend**

Used Across America

Excellent for Painting or Touching Up
Air Conditioning Equip.
Duct Work
Grilles
Piping and Coils

Fin Pipes
Converters
Cabinets
And 101 other uses

For better work and profit! No mixing, no clean-up, no compressor or hose needed. Just shake the can and paint. All cans furnished with guaranteed non-clogging spray valve. Complete your jobs the modern way. Ask your jobber for Sprayon today!

Attention Representatives! Some select territories still open. Write for money making details today!

COLORS: Chrome Aluminum
Gloss White • Gloss Black
Meadow Green • Bright Red
Medium Gray • Royal Blue
Ivory • Bright Gold • Copper-plate • Yellow • Clear Plastic
Black, White and Aluminum
Lacquer

CHAMPION BRONZE POWDER
& PAINT CO., Inc.

C2326 W. Van Buren Chicago 12, Ill.

Circle No. 90 on Reader Service Card

throughout with lifetime lubricated ball, roller, and anti-friction bearings. Lockable type trigger switch in the handle. Available with set of



assorted saw blades for cutting all materials and an all-steel carrying case. Unit is 14½" long, weighs about 7 lbs.

Circle No. 175 on Reader Service Card

Display Cases

Product: New models of 10 cu. ft. glass-front ice cream and frozen food display cases.



Manufacturer: Brewer-Titchener Corp., Mount Vernon, N. Y.

Features: Superstructure on 10 cu.ft. models has been redesigned to conform with those provided on the 16-cu.ft. models. New superstructure has a 12" flat top surface for the display of related items. Units feature full-vision of interior's contents through glass extending across front of case.

Circle No. 176 on Reader Service Card

Chilling Machine

Product: Low temperature chilling machine designed for production chilling applications.

Manufacturer: Sub-Zero Products Co., Cincinnati, Ohio.

Features: Factory adjusted to operate at -120 F and can be oper-

ated as cold as -150 F. Unit has capacity of 22 cu. ft. and thermal capacity of 4000 Btu/hr. Items to be chilled are loaded from oil quench into basket which is placed in chilling chamber by a mechanical lift. Special twin-blade agitator is mounted in corner of chamber. Agitator drives F-12 refrigerant down a draft tube, through a manifold and up through a perforated basket holding parts. System permits cooling 170 lbs of steel per hour from 80 to -120 F. Chilling chamber built of 7-gage steel for strength; measures 38" long, 32" wide and 36" deep. Outside dimensions of chilling unit are 84" long, 61" wide and 50" high. All steel construction and design prevents condensation. Lid is counterbalanced to stay open in any position, leaving both hands free.

Circle No. 177 on Reader Service Card

Low-Temp Chambers

Product: "Sub-Artic" line of low-temperature industrial chambers in five standard sizes.

Manufacturer: Tenney Engineering, Inc., Newark, N. J.

Features: Chambers designed for operation at -40 to -170 F, depending upon customer requirements. Models that operate at -150 and -170 F are equipped with Ten-



ney compressors especially engineered for handling refrigerants in very low temperature systems. Standard sizes available range from 1 to 12-cu. ft. work space and with dimensions ranging from 24 x 18 x 16" to 40 x 22 x 24". Chambers can be equipped with program control which automatically cycle temperatures according to pre-set patterns. Units can be designed to produce high temperatures in addition to low. Can be equipped with air or water cooled condensers. Caster mountings available if desired.

Circle No. 178 on Reader Service Card

Circle No. 94 on Reader Service Card

Handy Tube Bender

**Smoothly Bends ANY
Pipe or Tubing**



⅜" to 1½" O.D.



● Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle. U and offset—every time. Eliminate need for els. No more guesses—no kinks! Save enough time, labor and money on ONE job to pay for your Handy Bender.



See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

430 N. WILLOW ROAD — EVANSVILLE, IND.

Happy Talk!

Show a dealer a way to increase sales and 10 out of 10 times he'll smile. Can't blame him either. More sales mean more money in his pocket. And have you ever met a man who didn't want to make more money?

Well, if you sell air conditioners, start smiling. G.E.'s big Early Bird Sale will sell air conditioners for you—in the winter-time!



How? G.E. makes it possible for you to offer your customers big savings if they buy in winter. And as a sales-clincher: no payments till May! (Of course, you get your money right away.)

Why not cash in on this winter wind-fall? Write, wire or call the folks at Section CR-2, General Electric Company, Air Conditioning Division, Bloomfield, New Jersey. They'll be glad to tell you all about it.



**Packaged
AIR CONDITIONERS**

GENERAL ELECTRIC

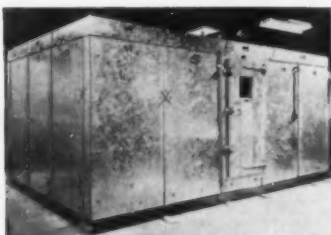
Circle No. 93 on Reader Service Card

Refrigerated Boxes

Product: Portable refrigerated boxes.

Manufacturer: Bailey Refrigeration Co., Inc., Brooklyn, N.Y.

Features: Units are designed to be knocked down into sections so they can be moved easily and re-assembled whenever needed. Refrigerated boxes have a storage capacity of about 1100 cu. ft. Units are self-



contained with the refrigeration machinery located in an insulated section of the top of the box. Units measure 12 x 18 x 8'.

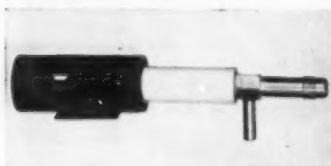
Circle No. 179 on Reader Service Card

Leak Detector Stem

Product: Leak detector stem for locating refrigerant gas leaks.

Manufacturer: Linde Air Products Co., Div. of Union Carbide & Carbon Corp., New York, N.Y.

Features: Can detect leaks of non-combustible halide refrigerant gases in concentrations as small as 20 parts per million of air. Unit uses a small acetylene flame which



reacts instantly to contact with fluorine refrigerant compounds; or to methyl bromide vapors in air where such concentrations are less than 10%. Stem is part of two leak detector outfits available from the firm. A 3' long suction hose probes into hard-to-reach spots and draws escaping gas to special alloy reaction plate where any trace of gas causes distinct color change in the flame. Stainless steel mixer tube and a ceramic insulating sleeve prevent overheating of handle during operation.

Circle No. 180 on Reader Service Card

Sheet Metal Cutter

Product: MC-12 "Impacutter" for sheet metal cutting, bolt and nut running, rivet cutting, etc.

Manufacturer: Ingersoll-Rand Co., Phillipsburg, N.J.

Features: Unit does not stretch metal, leaves no rough edges, eliminating need for grinding and finishing. Chisel is free to rotate and cuts in any position in relation to the handle. Built-in power regulator permits complete power control, from full power blows to light taps. Chisels can be instantly changed. Wire retainer eliminates danger of flying chisels. Barrel, piston and valve box made of heat treated or case hardened steel. Neoprene rub-



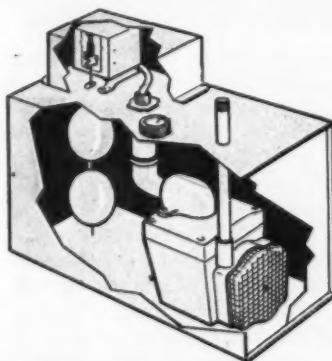
ber throttle valve face requires no lapping and seals tightly. Unit is available complete with metal carrying case and a set of chisels.

Circle No. 181 on Reader Service Card

Condensate Pump

Product: "Little Giant" condensate pump series.

Manufacturer: Samuel S. Gelber Co., Chicago, Ill.



Features: Heart of unit is pump made of die-cast aluminum, treated and covered with baked plastic coat-

ing to prevent corrosion. Pump is hermetically sealed in 5-year supply of oil. Pump is electrically grounded and is provided with 6' cord taking only 110 volt, 60 cycle, ac current. Condensate disposal unit is offered in three sizes with capacities to 7 gpm with discharge heads to 17½'. Completely automatic in operation, unit is furnished with a special Penn positive displacement switch.

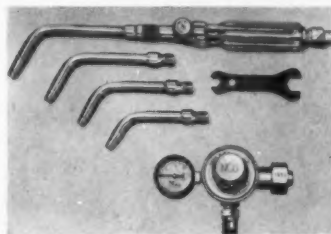
Circle No. 182 on Reader Service Card

Brazing Apparatus

Product: "Sod-R-Brace" air-acetylene apparatus.

Manufacturer: National Cylinder Gas Co., Chicago, Ill.

Features: Unit permits quick maintenance and repair work where fusion welding is not essential. Complete outfit consists of torch, tips, hose, and adjustable regulator.



Torch can be used for brazing with silver or copper alloys, soldering and heating. Although units uses no oxygen, fast work is possible. Possible to silver braze 3/16" copper tubing to brass fittings in about 38 seconds and will solder the same type joint in about 26 seconds. Torch has grooved plastic handle, leakproof valve and is equipped with a pilot light. Torch can be turned on or off, adjusted to proper flame, or to pilot light, with the thumb control on the handle.

Circle No. 183 on Reader Service Card

MARLO NAMES FOULDS BOSTON SALES REPS.

Marlo Coil Co. has appointed Foulds Associates, Boston, as Marlo sales representatives in the New England states of Massachusetts, Maine, Vermont and New Hampshire. Samuel T. N. Foulds, who heads the Boston firm, was formerly co-manager of Linnell & Foulds.

WOLVERINE W. COAST REP. MOVES TO NEW QUARTERS

Van D. Clothier, Inc., west coast representatives of Wolverine Tube Div., has moved its northern California branch to new and larger quarters at 19 South "B" St., San Mateo, Calif.

John A. Marshall will continue as manager of the northern California operation.

NEW STYROFOAM MOVIE AVAILABLE TO GROUPS

The Dow Chemical Co.'s educational film on the use of Styrofoam for low temperature insulation is now available to all interested groups.

The 18-minute sound movie presents the properties, principles of proper installation, how to work Styrofoam on conventional fabricating equipment, typical applications, and correct finishing technique for the material.

Among the advantages of Styrofoam featured in the film are its low thermal conductivity, its structural strength, water-resistance and light weight.

Arrangements for the film may be made through the Merchandising Section, Plastics Sales Department, The Dow Chemical Co., Midland, Mich.

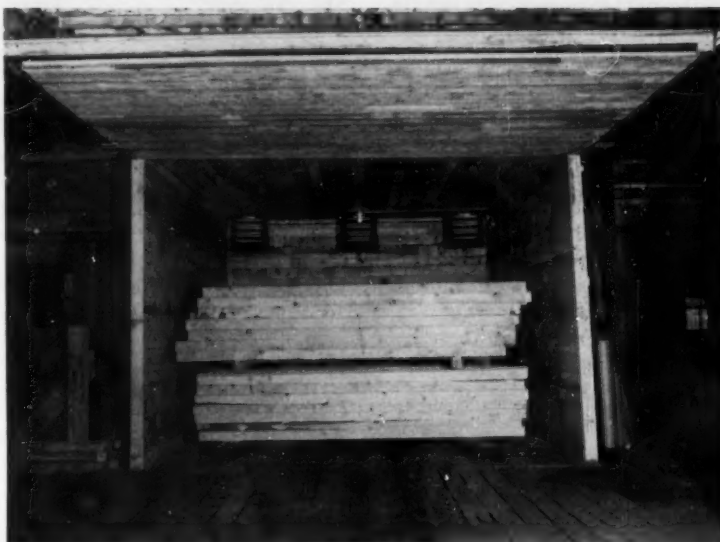
MINES ON 3 CONTINENTS USE AIR CONDITIONING

Two gold mines in South Africa, a coal mine in Belgium and a copper mine in Australia have signed contracts for installation of underground cooling systems to aid digging operations deep in the earth.

The main problem in all but the Australian mine is that rock temperatures climb as the mines go deeper underground, approaching temperatures of 130 F in some cases, making working conditions intolerable. High surface air temperatures created the need for air conditioning in the Australian mine.

All the mine air conditioning jobs will be done with Carrier centrifugal cooling machines installed as much as a half mile underground.

Special Refrigeration System Boosts Veneer Output For Lumber Company



BASSWOOD LOG COOLING ROOM of the Birds-Eye Veneer Co. Room is 20' long, 15' wide and 12' high, enabling handling machine to load and unload cooler with ease. Temperatures are held well below 40 F by a Frigidaire refrigeration compressor and the three forced-air cooling units shown at rear ceiling level. Note the raised front door which allows maximum access space to facilitate the handling of bulky loads of logs.

* * *

For some time the Birds-Eye Veneer Co. of Escanaba, Mich. had to virtually halt processing and cutting basswood logs during the summer season. This was due to the fact that when warm, basswood cannot be cut smoothly. The edges turn out to be rough and uneven. In winter, the company experienced no trouble in the cutting operation—all cuts were smooth and without fuzz. Also, during the cold months, the logs were warmed up to a temperature reasonably under 40 F, where cutting was found to be smoothest.

After trying various experiments of cutting and processing to remedy the situation, Juel Lee, president of the company, conceived the idea of refrigerating the logs in some manner to make them cool enough for cutting.

He took his problem to Refrigeration & Electric Service Co., the local Frigidaire dealer, and between them they worked out plans for a cooling room that would hold enough logs to keep ahead of the processing and accommodate the big machine that handles the logs.

The cooler was built entirely of wood and measured 20' long, 15' wide and 12' high. The one entire end of the cooler was made into a door and hinged upward to provide plenty of maneuvering room for the lumber carrying machine to load and unload the room.

Refrigeration was provided by a Frigidaire 3 hp compressor and three forced-air cooling units which were suspended at ceiling level inside and to the rear of the cooler. The compressor was installed on the floor outside.

The first test of the cooler was accomplished by using approximately 5000 feet of basswood logs at a temperature between 85F and 90F. After the first 24 hours of operation the temperature in the cooler dropped from 85F to 48F. After the next 24 hours, the temperature dropped to 34F. Then, during the next 10 hours, it went down to 28F. Since the logs should be held under 40F for proper cutting, the capacity of the equipment is such that it will easily cool down a load of logs on the hottest days.

YEAR-ROUND CONTROL . . .

Continued from page 88

be positioned so as to supply air at just the right temperature to handle the cooling or heating load and maintain temperature at the thermostat setting.

A separate static pressure regulator and damper should be installed so as to maintain a steady static pressure in each duct.

It will be seen that when all zones require heating, practically all the air will be supplied by the warm air duct, since the zone thermostats will have the cold air dampers closed. The reverse will be true when the sensible cooling load is highest. Because of this, the ducts must be sized so that either can carry the entire load.

Another method of zone control is to run a single supply duct with a branch to each zone.

During the cooling season, the duct carries air chilled and dehumidified to a condition to handle both the sensible and latent loads and each supply grille or damper

is set to supply sufficient air to handle the maximum load in the zone it supplies.

A steam or hot water coil is placed in the branch duct supplying each zone. This coil is controlled by the zone thermostat and will supply heat until the thermostat setting is satisfied.

It is important that the capacity of a direct expansion air conditioning system be proportioned to the load on the coils. Operating costs are adversely affected by operating at over capacity, needless dehumidifying is done, and coils often frost.

When two or more conditioners are connected to the same condensing unit, and the conditioners cut in and out at different times, the load may be widely variable. To meet such conditions, two or more compressors may be used, with suction and discharge sides connected to common headers.

Each compressor may have a bypass of one cylinder, controlled by a solenoid valve, or an expansion chamber to reduce capacity at light loads. It is not unusual to have three, four or more stages of com-

pressor capacity to be cut in and out, according to the load.

Capacity stages can sometimes be cut in and out by setting the compressor low pressure controls so that only one will be in operation so long as it holds below the maximum permissible evaporating pressure. When that is reached, the second will cut in and operate and cut out at a pressure below the maximum.

FUEL COSTS CUT . . .

Continued from page 84

through the plenum chamber and out into the ducts for distribution to the business offices served.

A clock thermostat causes the temperature in the offices to start to rise at about 7 o'clock each morning. Thus, when office workers arrive at 8:30 they find comfortably warmed quarters awaiting them.

Since its installation more than two years ago, the new heating unit is reported to have used only an average of 2½ gallons of No. 1 fuel oil per day, with daily fuel cost averaging only 38 cents.

Is Space an Important Factor?

Then Use This Distinguished Line of Close-Coupled Pumps

These GMC Pumps are ideal for a multitude of jobs. Smooth and efficient whether vertical, horizontal, up-side-down or any inclination. Low first cost, low power and maintenance costs. Top quality "by Aurora."

Caps. 10 to 800 G.P.M.
Heads to 250 ft.



Type GMC
Aurora Close-Coupled
Pump

**Write TODAY
for
CONDENSED
CATALOG "M"**

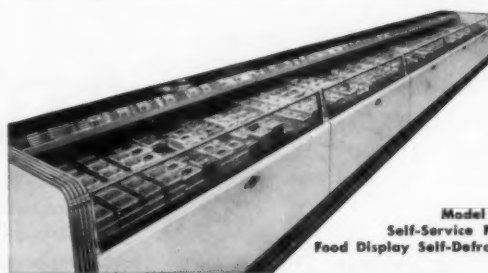
DISTRIBUTORS IN PRINCIPAL CITIES BULLETIN 120



AURORA
PUMP COMPANY

DIVISION OF THE NEW YORK AIR BRAKE COMPANY
21 LOUCKS STREET, AURORA, ILL.

Circle No. 95 on Reader Service Card

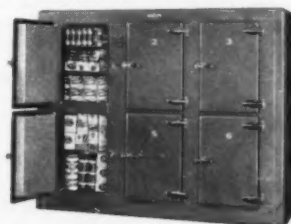


Model 4207
Self-Service Frozen
Food Display Self-Defrosting.

FEDERAL PROFIT BUILDERS!

for every department in your store. Get advanced features . . . low cost efficiency, with Federal . . . the complete line.

A style for every need, large or small Display
... Reach-in ... Freezer
... Spot Merchandiser
... Walk-in, etc.



Model 90F Storage Freezer
Self-Defrosting. Team mate
for frozen foods up front! →

Write for complete
franchise information.

FEDERAL
REFRIGERATOR
MFG. CO.

Dept. "E"
Main Office, Waukesha, Wis.



FACTORIES AT WAUKESHA AND BELLEVILLE, WISCONSIN
Circle No. 96 on Reader Service Card

40 TONS . . .

Continued from page 91

ment in order to eliminate cutting through the ballroom walls.

A power blower and filters for the fresh air are located in the basement. Thus, the blower in the unit acted as a booster fan. The ornate openings in the ceilings are now used as exhaust grilles and a positive exhaust at a point where the exhaust should be taken off of a room is provided by a power roof ventilator.

In order to eliminate extended filters on the units, the height of each unit was increased 1 foot to allow the insertion of high-speed filters flush to the wall. Also, in order to give better control of air distribution, the discharge grille area was increased to a size approximately 80% greater.

Steam coils were installed in the units, and air can be tempered during moderate weather or heated to maximum temperature during cold weather. The heat is controlled by means of a pneumatic control system. Each machine has its own thermostat for both heating and cooling, giving a year-round zone control air conditioning system.

Water supply, water waste, and steam lines were run from the basement to the units. Since the University supplies its own water, water saving equipment was not used.

Another somewhat unusual feature of this installation was the utilization of the condenser waste line as a condensate waste line, as well. Both lines were run from the unit and make a horizontal drop of 6 feet. At this point a fitting and check valve were installed in the condenser waste line and the condensate waste connected to this, thus effecting a saving on piping.

Both units were mounted flush with the walls, plaster was used to fill in the open spaces, and the units were painted to match the walls. Thus the air conditioning equipment has been perfectly assimilated into the design of the ballroom. Yet the units are still accessible, since the front panels can be easily removed for periodic checkups, replacement of filters, or cleaning.

After the installation was com-

pleted, decibelmeters, velometers, and smoke bombs were used by the engineering staff of the Buildings and Grounds Department of the University to make sure that the installation would be satisfactory, and that all the problems had been met and overcome successfully. The tests showed that the noise level was better than had been hoped for and that air distribution was acceptable, with no dead spots. Furthermore, velocity of the air was at a minimum and, therefore, there were no objectionable drafts.

AIRTEMP APPOINTS W. COAST DISTRIBUTOR

Tay-Holbrook, Inc. has been appointed distributor of Chrysler Airtemp products in northern California and northern Nevada.

Tay-Holbrook, will distribute the complete Airtemp line through their headquarters in San Francisco, and their 12 branches in Oakland, Berkeley, Santa Rosa, San Carlos, San Jose, Salinas, Bakersfield, Fresno, Stockton, Sacramento, Eureka and Reno.

New Arrival in Marsh "Serviceman" Family



*Smash hit
at the
All Industry Show*

The MARSH Serviceman TIMER

IT SHOWS:

**Total running time
Total elapsed time
on 24-hour dial**



115 VOLT, 60 CYCLE MODEL

For testing smaller units with compressors of 3/4 hp. or less. Operates in series . . . Simply plug equipment into timer; timer into wall outlet.



230 VOLT, 60 CYCLE MODEL

For testing larger installations regardless of horsepower. Operates in parallel. Note well shielded alligator clips for attaching to motor terminals and power lines.

This great addition to the "Serviceman" line does a vital job supremely well. Its white hairline pointer shows total time of test; red pointer shows total running time. It is easier to read, use, and interpret than a recorder . . . has no charts or leaky pens to bother with . . . yet it is very moderately priced.

Two models (opposite) cover all conditions. Note sturdy case finished in attractive hammerloay gray with sharp white numerals on black dial . . . also suction-cup feet for firm placement without damage to finish. This is the instrument you've been waiting for. Write for details, or

See your Wholesaler

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corporation
Dept. P, Skokie, Ill.

MARSH

Refrigeration Instruments

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

Circle No. 97 on Reader Service Card

INDEX TO ADVERTISERS

A

Acme Industries, Inc.	10
Airtemp Div., Chrysler Corp.	67
Alco Valve Co.	1
Allin Mfg. Co.	64
Harry Alter Co.	79
American Brass Co.	24
Ansul Chemical Co.	8, 48
A-P Controls Corp.	Cover 3
Aurora Pump Co.	112

B

Barber-Colman Co.	56
Bell & Gossett Co.	29
Bevco Co.	72
Bonney Forge & Tool Works	73
Brunner Mfg. Co.	2

C

Carrier Corp.	80
Century Electric Co.	30
Champion Bronze Powder & Paint Co.	108
Chase Brass & Copper Co.	21
Chicago Metal Hose Div., Flexonics Corp.	98
Commercial Credit Corp.	15
Connor Engineering Corp.	93
Copeland Refrigeration Corp.	Cover 2
Curtis Refrig. Machine Div., Curtis Mfg. Co.	28

D

Davison Chemical Co.	25
Dean Products, Inc.	53
Deering Air Conditioning Co.	97
Detroit Controls Corp.	9
Dow Chemical Co.	38
Drayer-Hanson, Inc.	51

E

Eastern Industries, Inc.	106
Eaton Div., American Potash & Chemical Corp.	105

F

Federal Refrigerator Mfg. Co.	112
Filtrine Mfg. Co.	46
Flexonics Corp., Chicago Metal Hose Div.	66

Freez-King Corp.	65
Fresh'nd Aire Co.	5
Frick Co.	74
Friedrich Refrigeration, Inc.	79
Friez Instrument Div., Bendix Aviation Corp.	75

G

General Electric Co.	109
Goulds Pumps, Inc.	102
Grand Rapids Brass Co.	23

H

Highside Chemicals Co.	27
Holsclaw Bros., Inc.	109
S. A. Hirsh Mfg. Co.	74

I

Ideal Cooler Corp.	106
Industrial Publishing Co.	79
Ingersoll-Rand Co.	70, 71

J

Jacks-Evans Mfg. Co.	7
Jarrow Products Co.	106
Jordan Refrigerator Co.	45

K

Kelvinator Div., Nash Kelvinator Corp.	101
Kennard Corp.	14
Kinney Mfg. Co.	31
Kramer Trenton Co.	26

L

Lancaster Pump & Mfg. Co., Inc.	60
Larkin Coils, Inc.	55
Lehigh Mfg. Co.	12
Lillie-Hoffmann Cooling Towers, Inc.	60

M

Maid-O-Mist, Inc.	108
Marlow Pump Co.	77
Jas. P. Marsh Corp.	113
Miracle Adhesives Corp.	53
J. W. Mortell Co.	59
Mueller Brass Co.	18
Mueller Furnace Co.	95

N

Nash-Kelvinator Corp., Kelvinator Div.	101
Northern Indiana Brass Co.	16

P

Patterson-Kelley Co., Inc.	6
Peerless of America, Inc.	72
Penn Controls, Inc.	32
Perfection Stove Co.	82
Pittsburgh-Corning Corp.	17
Precision Machine Co.	55
Pyramid Instrument Co.	19

R

Ranco, Inc.	62
Redmond Distributors, Inc.	57
Remington Corp.	92
Revere Copper & Brass, Inc.	41
Rotary Seal Co.	107
Rubatex Div., Great American Industries, Inc.	20

S

Sales Promotions	96
Sporlan Valve Co.	4
Superior Valve & Fittings Co.	99

T

Tecumseh Products Co.	103
Tenney Engineering, Inc.	58
Texas Co.	68
Typhoon Air Conditioning Co., Inc.	89

U

United Cork Co.	74
United Mfg. & Service Co.	100

V

Virginia Smelting Co.	54
Viking Copper Tube Co.	13

W

Wagner Electric Co.	47
Wagner Tool & Supply Co.	56, 72
Williams Div., Eureka Williams Corp.	85
Wolverine Tube Div., Calumet & Hecla, Inc.	11

YOUR GREATEST ASSET

is the **DEPENDABILITY**
of your product . . .



Insure it with
DEPENDABLE
Controls

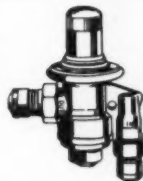
A-P design, engineering and manufacturing are all geared to your most valuable asset — the reputation of your product for *dependable* performance. No matter what your application may be — air conditioning, commercial or low-temperature — there's an A-P expansion valve that will help you maintain that reputation.

More than this, unique design and advanced engineering have made A-P thermostatic and automatic expansion valves favorites with dealers and service engineers. You can cash in on this wide acceptance when you specify A-P on your product.



Any A-P expansion valve can be supplied with unloading feature — where equalization of suction and discharge pressure is required due to low-torque motor-starting characteristics.

Models 204C and 304 — Recommended where expansion-valve performance is desired, for water coolers, room coolers and similar applications up to 1 hp.



Model 208 — Inexpensive pressure-limiting expansion valve with built-in overload protection. Custom-set to your specifications, yet available from factory stock.



Model 206C — Exceptionally compact thermostatic expansion valve. Liquid charge. Factory pre-set to your requirements. Non-adjustable to prevent tampering in the field.



Model 104 — Versatile custom-built automatic expansion valve. A highly adaptable unit ideal for high-production, fractional-horsepower applications where low cost is major factor.



DEPENDABLE Controls
for Air • Liquids • Gases • Refrigerants



Thermostatic Expansion Valves



Pressure-Limiting Valves



Automatic Expansion Valves



Bleed-Type Valves



Pressure-Regulating Valves



Solenoid Valves



Filters and Driers



Water-Regulating Valves

A-P CONTROLS CORPORATION

2486 N. 32nd St., Milwaukee 45, Wisconsin

Export address: 13 E. 40th St., New York, N. Y.

In Canada: A-P Controls Corporation, Ltd., Cookeville, Ontario

Circle No. 98 on Reader Service Card

WHY YOU SHOULD BE SURE TO SEE...

the March Air Conditioning Specifications Issue of Commercial Refrigeration & Air Conditioning

- 1 The 1954 issue will include more manufacturers and models of room and store type air conditioners than the 1953 edition. It will also include for the first time the specifications data on residential air conditioners, both year 'round and summer cooling types.
- 2 The issue will be out March 1, timed for the peak selling season and useful to contractors, dealers and distributors salesmen all season long.
- 3 The pictorial presentation of specifications used by Commercial Refrigeration & Air Conditioning makes this information easiest to read and use. More than 12,000 reprints of this data were sold in 1953.
- 4 Inclusion of data on residential air conditioning will mean that this issue will have added value to every reader in the air conditioning business.
- 5 By editorial services like this, Commercial Refrigeration & Air Conditioning continues to help its readers do a better job of merchandising the products or services which they handle.

DON'T MISS the MARCH SPECIFICATIONS ISSUE of **COMMERCIAL REFRIGERATION & AIR CONDITIONING**. If you're in the air conditioning business, it will provide you with a whole kit-full of vital sales ammunition.

COMMERCIAL REFRIGERATION & AIR CONDITIONING

1240 ONTARIO STREET

CLEVELAND 13, OHIO